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The Cotton Industry's Work-Week

LAST week, it was announced that a group of leaders in the cotton manufacturing industry had recommended voluntary adjustment to a 55 hour work-week, day shift, and a 50 hour work-week, night shift. Reports to date indicate that the prospect for a general adoption of this recommendation is bright.

From every standpoint, this development is encouraging.

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Its primary significance rests in the fact that it reflects a type of leadership within the industry which has been sadly lacking in the past. Five years ago, a conference such as that held in January by cotton manufacturers with President Hoover and officials of the Department of Commerce would have led nowhere because there was no machinery through which a program could be put into execution. Today, the industry has The Cotton-Textile Institute, and under its auspices a definite initial step has been taken within six weeks of the holding of the conference.

Next in importance is the fact that the move toward placing the textile work-week nearer to parity with that in other industries has come from within the industry itself rather than being forced from the outside.

Finally, the recommendation injects an element of regularity into the basis of production. "Reduction" to a 55-hour week may not seem vital when most units are operating short time anyway but it must be remembered that spurts of activity alternate with curtailment, and the establishment of a definite basis of potential capacity is a sound step. The elimination of noon-hour and over-time operation in itself is extremely important as anyone who has travelled recently through textile districts can testify.

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Naturally, in a matter so controversial as is the subject of the work-week, no move of this sort will satisfy everyone. Some manufacturers will feel that the entire program is inadvisable while others will claim that the group should have gone further and recommended a 50-hour week, both day and night shift, and the elimination of night work for women and minors. The first claim is not borne out by the facts as they exist today. So far as the second is concerned, it must be remembered that real progress is made by gradual stages and not by revolutionary tactics. This is a movement of the industry itself and, as such, it can progress no faster than the enthusiastic support of a majority of manufacturers permits.

From our standpoint, the only real fault we found with the announcement was the fact that a specific statement was not made to the effect that the same wage scale would be continued for the shorter work-week as had existed prior to the adjustment. In the absence of such definite reference, we assume this to be the case. We trust we are right.

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We believe that the general adoption of this recommendation will have a salutary psychological effect upon the industry itself, upon its employed personnel, and upon the public at large. Furthermore, if this further step in cooperative action proves successful, it will augur well toward execution of additional remedial activities.

The Week in Textiles

Outlook . . .

RAW COTTON low, but should show signs of steadiness at some level of price before long, awaiting more definite crop developments. . . . . Cotton goods still slow with some improvement on the horizon. . . . . Wool goods about due to pick up somewhat. . . . . Hosiery market seeking stability. . . . . Raw silk in better technical position.

Recommend Shorter Week . . .

FOLLOWING LEAD of weavers, group of prominent carded cotton yarn spinners, after conference in Charlotte, N. C., recommended that carded spinning mills adopt a maximum of 55 hours per week for day shifts and 50 hours for night shifts. Elimination of lunch-time running and overtime was also recommended. . . . . George A. Sloan, president, The Cotton-Textile Institute, who attended the conference, stated that leading mill executives felt that such a policy would diminish irregularity of employment.

At Palm Beach . . .

MISS BOHN, style advisor of the Wool Institute, who has this week returned from a scouting trip to the Florida resorts, believes that white and pastels will predominate this season. . . . . Soft pink and blue formed an effective combination in many costumes and their importance appears to be increasing. . . . . Among the highlights Miss Bohn mentioned were: ensemble more in evidence than ever, with fingertip-length coats, often of wool crepe; fabric bags gaining favor over leather; fleeces, polos, homespuns, etc., in long coats; velour for afternoon wear . . . . . Style news may seem a long ways from a weave shed, but milliners are learning to appreciate the opportunity it affords them of planning ahead.

Silk Exchange May Expand . . .

A COMMITTEE HAS been appointed to make a study of the possibility of trading in China steam filatures and Italian raw silks on the National Raw Silk Exchange. . . . . In addition to placing the Exchange on an international basis it is believed that such an extension of trading would provide recognized international standards of classification.

Wool Marketing . . .

THERE CONTINUES to be a divergence of opinion in the field on the National Wool Marketing Association. . . . . As reported previously Texas warehousemen believe they can handle marketing as well as, or better than, cooperatives. A report from Wyoming indicates that some growers fear that buyers are uniting to combat national association and they prefer organized growers to organize buyers. . . . . It is estimated that 60% of the 5,000,000 lb. produced in Washington will be handled by cooperatives. Other districts aren't so enthusiastic. . . . . It is evident that many have been blaming or praising the Federal Farm Board agencies prematurely. Like any new organization there are numerous kinks to be worked out and it will be some time before the true influence will be felt.

Cotton Finishing Gains . . .

COTTON FINISHING ACTIVITY, as reported by the National Association of Finishers of Cotton Fabrics, showed an increase for February as compared with January, but still remains considerably below 1929 figures. . . . . From the low of 51% of normal average capacity established in December, white and dyed climbed to 60% in January and 63% in February. . . . . Prints for February ran 85% as against 71% in January, 71% in December and 107% in February, 1929.

Mildew Preventive . . .

AFTER MORE than three years of research it is recently reported that the Shirley Institute, Manchester, England, has perfected an antiseptic to prevent mildew in cotton. The new compound had to meet the rigid requirements of being non-poisonous, unaffected by metals, colorless, odorless, and inexpensive. . . . . What with mothproof wool and mildewproof cotton going away for the summer won't be such a gamble.

German Taxation . . .

TAXATION has assumed dimensions which are said to threaten seriously the welfare of some textile undertakings in Germany. The financial, communal, postal and railway authorities vie with one another in the attempt to find new means of raising revenue, and apparently without regard to economic consequences. . . . . German labor unions are demanding a revision of the textile wage tariff agreements terminating this year. A further wage increase of 15% is demanded, with no overtime to be enforced, on a strict 48 hours per week basis.

Wool Consumption and Activity . . .

REDUCED TO grease equivalent, 43,626,927 lb. of wool entered into manufacture in the U. S. during January, according to reports received by Department of Commerce from 456 manufacturers. This compares with 37,802,612 lb. for December and 54,030,-

933 lb. reported by 474 manufacturers in January, 1929. . . . . Wide looms operated at 52.7% of single shift capacity as compared with 54.3% for December and 69% for January, 1929; narrow looms 50% as compared with 53% in December and 63% in January, 1929; carpet looms 50.7% as compared with 55% in December and 63% in January, 1929. All the January, 1930, figures represent the lowest percentage of activity in a number of years. . . . . Woolen spindles and cards remained at the December figures of 61% and 63% respectively. Worsted spindles were less active, but combs showed an increase. All are below January, 1929.

Whither Goest Rayon . . .

VISCOSE, NITRO, acetate, cuprammonium —which way will demand for rayon swing in the next five years? . . . . Proposed mergers and rumors of mergers, would indicate that rayon producers are looking ahead and desire control of several processes so they will continue in the van no matter which path demand chooses. . . . . Divided energy, however, is seldom as successful as specialization, and producers now are studying the difficult problem of whether to diversify and be safe for the future, or to concentrate on one process and be economical.

Silk Consumption . . .

RAW SILK ended February in a better general statistical position . . . . . Approximate deliveries to American mills, as reported by Silk Association of America, were 49,852 bales, a total somewhat higher than expected. January figure was 57,683 and 1929 monthly average 51,646 bales. . . . . Imports remained fairly low, the 42,234 bale total being about 13,000 bales below the 1929 average and slightly less than February, 1929. . . . . Stocks decreased 7,618 bales from the end of January total to 68,646. Stocks, although showing a decline of 22,000 bales from the end of December, are still high, being about 21,700 bales above February, 1929, and 15,000 bales above the 1929 monthly average.

Jantzen Swims Fast . . .

A STATEMENT from Seattle, Wash., credits the Jantzen Knitting Mills with 18% by volume and 25% by value of all the wool swimming suits produced in the United States last year as compared with less than 0.5% by volume and 2% by value in 1921. . . . . From 1921 to 1927 suit production in the country decreased 18%, but Jantzen output rose 162%. From 1927 to 1929, while national output was growing 6.5% Jantzen sales expanded 99%.

Tariff . . .

BY A VOTE of 49 to 33 Senate adopted amendment offered by Senator Shortridge of California providing for duty of 7c. per lb. on staple cotton $1\frac{1}{8}$ in. and over. Southern Senators plus farm bloc carried amendment against vote of Republicans from manufacturing states. . . . . Unsuccessful effort was made to set back Finance Committee rate of 90% on hand embroidered and decorated household linens to existing 75%.

Cotton Committee Reports . . .

SENATE SUB-COMMITTEE, which has been investigating cotton exchanges, submitted a peaceful report. Several suggestions for legislation are given, but leaders believe action should be delayed until Federal Farm Board has had opportunity of deciding what, if any, legislation is necessary to carry out its policies. . . . . The committee urged greater control of cotton futures operations; longer notice period; adequate authority to investigate unfair practices on exchanges; premiums for $\frac{7}{8}$ in. and over; studies of foreign cotton, bale coverings and yield.

Consult Your Customer . . .

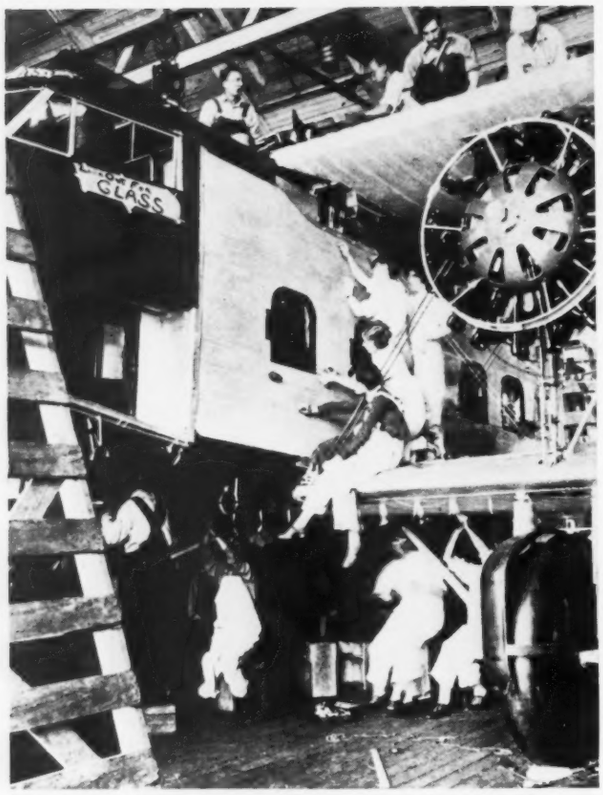
LET CUSTOMER needs be your basis of production. Psychoanalyze your line in the light of actual best-sellers as shown by sales, and eliminate slow-moving products which are "kept in the family through tradition." . . . . These are the rules of industrial success in 1930, as expounded by Edward J. Mehren, vice-president of the McGraw-Hill Publishing Co., addressing a Marketing Conference dinner of the American Management Association, in Chicago, Wednesday evening. . . . . "Weak links are millstones around the neck of stronger links," said Mr. Mehren, "Competition today outstrips the salesman of the cloistered products." The manufacturer can help himself and one of the surest ways is to "eliminate overproduction of the obsolete product."

Prints . . .

POPULAR PRINTS seem to run at present to small and medium rather than large patterns. . . . . Dots, and numerous variations of dots, are quite noticeable. . . . . Conversely, a swing to larger patterns is probable in fabrics for children.

A. C. M. A. Dates Changed

THE DATES of the annual convention of the American Cotton Manufacturers Association, to be held at the Carolina Hotel, Pinehurst, N. C., have been changed from May 13-14 to May 6-7 to avoid conflict with the Knitting Arts Exhibition which is scheduled for the week of May 12 at Philadelphia Commercial Museum. This information arrived too late for correction of item in the "Textile Calendar" appearing elsewhere in this issue.



Expert seamstresses are stitching mercerized cotton airplane cloth to the fuselage and wing stubs of a Boeing 18-passenger trimotored transport at the Boeing Airplane Co. of Seattle.

Cotton in the Air

By Robert Johnson

WITH the steadily increasing importance of commercial aviation in the United States, the field of airplane manufacture constitutes a consequential market for products of the textile industry. During the year 1929, airplanes were flown 200,000,000 miles in commercial, private and military aviation in this country. To fill the demand for planes, airplane manufacture had been correspondingly developed, and at present occupies an important position in the industrial world.

A considerable amount of fabric enters into the construction of the average airplane; the Boeing Airplane Co., for example, uses approximately 20,000 yd. of airplane cloth annually. The necessarily strict conditions to which the average airplane is subjected have made it imperative to place high requirements upon the fabric used in aircraft construction. These specifications have been generally standardized, and textile companies are producing airplane fabrics, under trade names as a rule, to meet them.

Cloth in Grade A Only

Airplane cloth is produced in one grade only, known as Grade A. It is made of cotton, plain woven; yarns are mercerized under tension, and selvages are flat woven with tension no greater than the body of the fabric. The cloth does not contain over 3½% sizing; it is thoroughly neutralized after mercerization. The width of the cloth is 36 inches between selvages, and as a general rule, the length of a single cut shall not be less than 40 yards. There must be from 80 to 84 threads per inch, and the weight per sq. yd. should not exceed 4.5 oz. These requirements are officially established as military specifications. Manufacturers pack airplane cloth into rolls containing from 500 to 600 yd. for shipping.

Careful Fabric Tests

When fabric shipments are received at the Boeing Airplane Co.'s factory at Seattle, samples, about one yard in length, are taken from each of the rolls and referred to the test engineering department where engineers conduct tests for strength, neutralization, sizing, thread count, size, and weight. Providing the tests are satisfactory, the cloth is designated as accepted and transferred to the wing covering department of the factory.

The initial step in the covering of a wing framework is the detailed inspection of the fabric. The cloth is unrolled on a long table under powerful electric lighting, and trained seamstresses examine it carefully for any flaws. In the event of a defect, the section of the cloth is removed.

Fabric Inspected

After the fabric has been checked by the seamstress-inspectors, it is taken to the machines which are equipped for double seam sewing. There the cloth is sewed in the required shapes and sizes for application to the wing

frameworks. These structures, made either of wood or metal, are transmitted to the wing covering department upon completion in the production units of the factory.

The cloth is then placed over the wing framework and stretched across the upper side, being secured with tacks and pins. The framework is then reversed and the fabric is drawn across the lower side. To insure a maximum of tautness, the framework is again turned over and the cloth is once more stretched over the upper side. The fabric is applied so that the warp threads, running parallel to the selvages, are paralleling the line of flight of the wing. The cloth must have equal tension throughout the entire surface after being stretched. The cover is then permanently sewed by hand, with a minimum of four stitches per inch, and stitches being locked at six-inch intervals. In sections of the framework where the wood structure prevents sewing, the fabric is secured by tacking. In the case of metal frameworks, edges are bound firmly with fabric to which the cover may be sewn.

Laced to Rib of Wing

The fabric is then laced securely to the ribs of the wing structure, the lacings, a cotton cord lightly waxed with beeswax, being made from the upper side to the lower and back, passing around the rib itself. The lacings are tied with seine knots. A reenforcing tape, also of cotton, is placed over the ribs under the lacings for additional protection.

To guard against any possible defect in the application of the fabric to the framework, company inspectors, and government inspectors in cases where the work is purposed for military aircraft, examine the wing covering after each operation during the entire process. When they have approved the completed structure, it is ready for treatment in the dope room of the Boeing factory.

Two coats of clear nitrate dope are applied with hand brushes to the fabric. After these have dried, a finishing, pinked tape is applied over the lacings along the ribs and doped into place. Three more coats of the clear nitrate dope are then applied. The wing is then treated with two or three coats of pigment dope, applied with spray guns, and required markings and insignia are placed on with the use of special Boeing-developed patterns and tapes. When these have dried, the wing is finally approved by the inspector and is ready for attachment to the airplane.

Wing Spans From 30 to 80 Feet

At the Boeing Airplane Co. plant, planes ranging in size from single-seater military pursuit ships to large 18-passenger tri-motored transports are produced. The wing span of the upper wings for the small ships is 30 ft., while the upper wings of the transports have spans of 80 ft.

Fabric covering is applied to the fuselages, or bodies, of the planes in the same manner as in the case of wings, and is similarly doped. The fuselage of the transport is 55 ft. in length.

Thirty-two women, all of whom are skilled seamstresses, are employed in the wing-covering department of the Boeing plant to handle the work of applying airplane fabrics. These women are under the direction of an expert foreman and two trained inspectors. It is estimated that 120 man hours are required for the covering of an average wing.

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Wool Combs Indicate Gain in Activity

AN INCREASE in consumption of 5,824,000 grease pounds in January over December seemed rather surprising taken in conjunction with a decrease in general machine activity for the month of 0.6%. An analysis of the statistics supplied by the Department of Commerce brings out the important fact that the recession in worsteds seems to have been checked and a definite upward turn is in evidence.

At the loom end, there was a further decrease in machine activity of 3%; woolen cards and spindles gained 0.3%; combs and worsted spindles increased 2%. Breaking up the comb and spindle figure a net gain of 6.3% is seen in wool combs. Any real change, either for the better or worse, is usually seen in preparatory machine activity which maintains a fairly constant relation to the actual amount of wool consumed.

Comeback in Mid-Atlantic States

A further breaking up of aggregate statistics shows New England still slipping while the Mid-Atlantic States, New York, New Jersey and Pennsylvania made a surprising comeback in preparatory worsted activity. New England reported in January 1,612 combs in place, the Middle Atlantic division, 879; New England had 1,737,000 worsted spindles and the Mid-Atlantic States, 690,000. On this basis, combining cards and woolen spindles and combs and worsted spindles, New England fell back 7% as compared with December while the Mid-Atlantic States forged ahead 12.3%. The showing in detail is as follows:

	January	December	Change
Wool Combs			
New England	76.6	77.1	Dec. .5
N. Y.-N. J.-Pa.	77.9	60.2	Inc. 17.7
Worsted Spindles			
New England	51.4	57.9	Dec. 6.5
N. Y.-N. J.-Pa.	62.1	55.2	Inc. 6.9

A more extended view of wool manufacturing in the United States indicates that January registered the low point of general machinery activity for the last five years in both the woolen and worsted divisions. Taking the average woolen and worsted machine activity for the year 1926 each at 100 then the following comparison is possible for the two big branches of wool manufacturing:

	Woolen	Worsted
January, 1926	99.2	104.7
January, 1927	97.4	105.2
January, 1928	103.7	96.0
January, 1929	110.0	103.0
January, 1930	83.0	89.6

Summing up the above it seems rather clear that a larger consumption of wool co-indexing with increased production from the combs indicates growing interest and business in worsteds; that February statistics when available will indicate increase in spindle activity followed in March by a larger output from the broad and narrow cloth looms.

Trend to Rough Weaves Forecast

THE tendency toward rough weaves in both silks and cottons is emphasized in the annual report of the trend of sales of silk, rayon and cotton issued by the National Retail Dry Goods Association and sponsored by the Du Pont Rayon Co.

The buyers' forecast also stresses the importance of rough weaves for spring wear. Among the stores visited in 42 cities and 26 states from coast to coast, the following percentage of buyers mentioned the fabric listed as outstanding for the current spring: Silk department—69% printed crepes, 53% plain crepes, 29% shantung, 25% rough weaves, 12% printed sheers; wash-goods department—65% rayon pique, 33% rayon and cotton crepe, 32% rough weaves, 30% printed rayon voiles, 30% all-rayon crepe, 17% cotton prints, 14% printed cotton sheers, 11% cotton pique.

The increased sales of plain crepes, transparent velvets and shantungs, and the decline in the sales of plain sheers (chiffon, voile and georgette) and tub silks characterize the periods covered by the survey, the report states. These periods were spring and summer (February to August), and the autumn (August to November), 1929, compared with the same periods in 1928.

The report in part follows: Plain crepes including flat crepes and cantons were twice as important as satin-faced fabrics this past autumn. The latter took 15% of the relative value of sales against 28% for crepes, considering the total sales of the silk department as 100%. Black silks declined 14% in the autumn, but held their own in spring and summer.

Buyers apparently base their forecast for shantung and rough weaves in 1930 on the increased sales of these fabrics last spring and summer, when they showed a gain of 50% over the May to August period of 1928.

The report traces sales trends both geographically and according to types of stores. There is an apparent decline in sales of higher price materials. The relative value of sales of plain crepe from $2.25 a yard upward declined 14%. Printed crepe from $3.50 to $5.95 a yard declined 25% in the relative value of sales compared with the May to November period, 1928. A pronounced decline is also said to have taken place in sheer printed crepes at those prices.

A feature of sales of rayon fabrics was the importance assumed by the rayon and cotton crepes and piques which eclipsed the sales of rayon alpacas. Rayon voiles and the taffeta group also declined. During the autumn season, August to November, 1929, the sales of rayon-containing fabrics increased 100%.

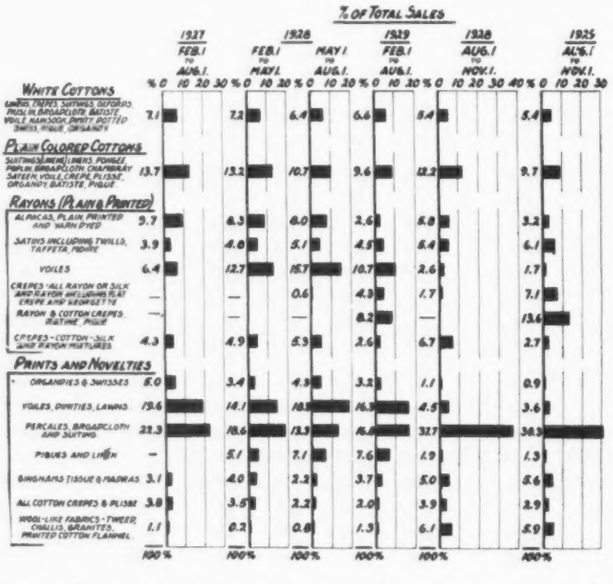
The report calls attention to the fact that printed linens and piques were twice as important in exclusive stores and in large cities until the summer of 1929, when their sales were more evenly divided, which may indicate they are passing from high fashion to the popular trade.

Rayon containing fabrics which formerly were more important in popular price than in exclusive stores, reversed themselves in the spring and summer of 1929, indicating the improvement that has been made.

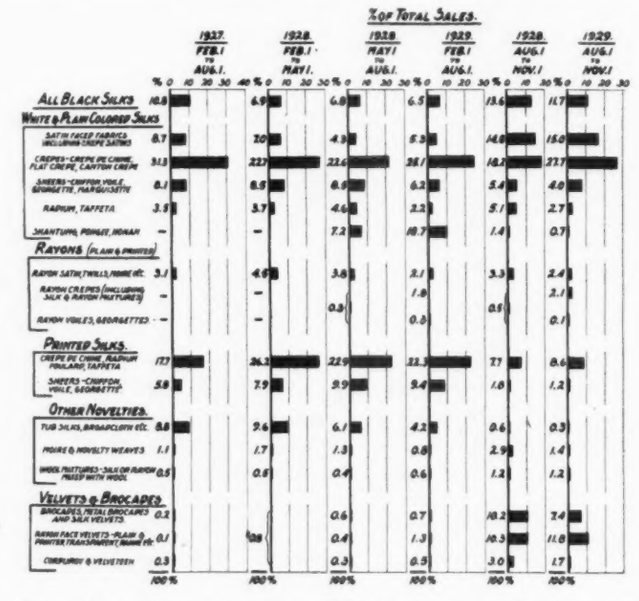
Over four-fifths of the sales of printed rayon and cotton crepe were made at prices ranging from 79c. to $1 per yard inclusive for the February to August period, 1929, and 85c. was the average price of this fabric, while the average price for the all-rayon flat crepe was $1.79. A decrease of 25% is noted in the relative value of sales of cotton prints ranging from 49c. to $1 compared with the 1928 period.

Though the relative value of sales of plain crepe at $1.95 for February to August, 1929, showed a slight gain over the period May to November, 1928, a decline of 14% was shown in the sales of this fabric at prices from $2.25 upward during these periods.

Over 60% of the exclusive-store business was done at prices ranging from $2.25 to $4.95 per yard contrasted with 32% in the popular-price stores. On the other hand, 26% of the popular-price-store sales were reported at prices from $1.39 to $1.79 per yard compared with 6% in the exclusive stores. The outstanding price continues to be $1.95 per yard, though the average price is $2.25.


% OF TOTAL SALES
1927 FEB. 1 TO AUG. 1
1928 FEB. 1 TO MAY 1
1928 MAY 1 TO AUG. 1
1929 FEB. 1 TO AUG. 1
1928 AUG. 1 TO NOV. 1
1925 AUG. 1 TO NOV. 1
WHITE COTTONS
PLAIN COLORED COTTONS
RAYONS (PLAIN & PRINTED)
PRINTS AND NOVELTIES
100%

Wash-Goods Department. Relative Value of Sales of Different Fabrics. Total Sales in Dollars for Each Period = 100%


% OF TOTAL SALES.
1927 FEB. 1 TO AUG. 1
1928 FEB. 1 TO MAY 1
1928 MAY 1 TO AUG. 1
1929 FEB. 1 TO AUG. 1
1928 AUG. 1 TO NOV. 1
1929 AUG. 1 TO NOV. 1
ALL BLACK SILKS
WHITE & PLAIN COLORED SILKS
RAYONS (PLAIN & PRINTED)
PRINTED SILKS
OTHER NOVELTIES
VELVETS & BROCADES
100%

Silk and Velvet Department. Relative Values of Sales of Different Fabrics. Total Sales in Dollars for Each Period = 100%

Carding and Spinning Problems Discussed by S.T.A. Men at Montgomery

THE spring meeting of the Alabama-Mississippi-Louisiana Division of the Southern Textile Association, which was held in the Chamber of Commerce Building, Montgomery, Ala., Feb. 28, consisted chiefly of discussions concerning problems encountered in carding and spinning.

The meeting was under the direction of D. Singleton Cook, agent, Pepperell Mfg. Co., Opelika, Ala., chairman of the division, and opened by an address of welcome by W. A. Gunter, Jr., mayor of Montgomery, which followed the invocation by Dr. Donald McGuire, pastor of the First Presbyterian Church.

Walter C. Taylor, secretary of the Southern Textile Association, described some of the work handled by the Charlotte office, and took occasion to urge members to read the results of Arkwright tests which are published in the association's "Book of Proceedings."

Chairman Cook then placed the meeting in the hands of R. W. Jennings, superintendent, Lanett (Ala.) Cotton Mills, who lead the discussions relating to card-room problems. William C. Ryckman, superintendent, Lane Cotton Mills Co., New Orleans, La., presided at the afternoon session which was given over to the consideration of questions on spinning.

Following the group luncheon, which was served in the main dining room of the Whitley Hotel, members and visitors enjoyed an address by Judge William H. Sanford, of Montgomery, on the subject of governmental activities and their relation to industry.

Card Room Problems

The opening question of the morning session asked for a report on the experience of members with spraying oil on raw cotton. Although some mills had not obtained satisfactory results in oiling cotton by the methods first introduced several years ago, later trials with improved spraying equipment were said to have reduced the amount of lint in the carding and spinning rooms.

Chairman Cook said, "We have not had it in sufficiently long to make tests, but we are satisfied, as our experience has been so satisfactory, even from the standpoint alone of cleanliness and reduction of lint, and the additional good running qualities of the shorter cotton ($\frac{7}{8}$-inch)."

Edwin Howard, southern agent, Fales & Jenks Machine Co., Greenville, S. C., upon the chairman's request, told of his company's experience with one-process picking, and pointed out that a more uniform lap is obtained with one-process machinery.

Methods used for correcting weight of laps were described and the results obtained as to the accuracy of yarn numbers were given. One method used was the Aldrich system, which employs an instrument attached to which is a given quantity of raw cotton for the purpose of automatically determining percentage of regain, thereby obtaining a figure which is used for adjusting the weight on the picker lap scale. This method was said to have reduced the amount of variation in beam weights and to have eliminated frequent changes in draft gears.

On the subject of humidity in the picker room, Mr. Ryckman said: "We have a system that indicates the humidity or regain of moisture of the cotton any time of day. We have had this indicator in the room for several months, but, having also in our picker room a complete equipment of humidifiers, I find that the indicator there is absolutely useless because it rarely registers as much as 0.75% either side of standard, and we attribute this more to the humidification of our picker room than to anything else."

On Straight-Tooth Card Clothing

Concerning experience with straight tooth card clothing, Mr. Jennings said that tests on six cards equipped with that type of clothing showed that by stripping every 40 to 50 hours the work was found to run clean enough. It was found also that sliver from the cards equipped with straight tooth clothing weighed from two to four grains heavier, and continued to weigh a little heavy in the drawing process, but by the time the sliver reached the speeders there would be practically no difference in the weight as compared with the regular work. This would tend to indicate that, although more short fibers remained in the sliver from the cards, these short fibers would drop out in subsequent processes in the card room. It was generally found that the straight tooth clothing greatly reduced the time and labor in stripping.

It was reported that one mill spinning 23s yarn, found that an increase of break draft on slubbers and speeders from 120 to 141 tended to decrease the breaking strength, but did not appear to make any difference in the evenness of the yarn.

Several members reported most favorable results with chain drives on roving frames. Mr. Ryckman stated that after purchasing several new frames equipped with chain drives, his mill decided to equip old roving frames with the same type drive.

According to Mr. Cook, the best method for conditioning filling yarn to prevent kinking is by storing the yarn long enough to allow the twist to "set." In cases where it is not practicable to store filling yarn for the required length of time, a specially constructed conditioning room, in which the air can be conditioned at a certain relative humidity or temperature, was said to be satisfactory and in many cases more economical. Another member who used a conditioning room stated that his filling yarn remained in the room for 12 hours at 105 to 110 relative humidity.

Filling wind was said to give an equal, if not better, breaking strength with less twist on 30s carded than that used in warp wind. Mr. Hampton said that he found filling wind to spool better than warp wind and to have greater breaking strength, a fact which was attributed to elimination of the yarn whipping against the separators, as well as the jerk of the traveler. Filling wind was said to produce better conditions in weaving and to decrease the percentage of seconds.

Favorable experience was reported on the use of bobbin cleaning machines for roving bobbins. Each machine was said to take care of from 20,000 to 30,000 spindles each, and to greatly reduce the cost of removing waste from roving bobbins.

Textiles at British Industries Fair

LONDON, ENGLAND.

THOUGH the textile section did not receive the backing of either the rayon-yarn producers or the Lancashire and Yorkshire manufacturers, there was much of interest from a rayon standpoint at this year's British Industries Fair, held at Olympia. The Dunfermline linen trade, the only textile center which was really well represented, has been making very rapid progress with the utilization of rayon, especially in conjunction with cotton. Cotton and acetate rayon table linens in two-tone cross-dyed effects were the feature of the booth of Henry Reid & Son, Ltd., Dunfermline. These were mostly double-sided fabrics produced on a jacquard damask loom with the acetate in silver and the cotton colored.

Linen and Rayon Mixtures

Courtaulds "Seraceta" was popular among the Dunfermline manufacturers, and is said to be particularly suitable for the type of fabric produced. Viscose yarns, however, were much more widely used than acetate, and the demand for softer handled fabrics is resulting in a larger use of fine-filament viscose yarns. In addition to table cloths, bedspreads and curtains are being turned out in considerable quantity by the Dunfermline firms; these are of similar construction to the table cloths, cotton being used almost invariably in the warp, and viscose in the weft. An interesting point in favor of rayon, however, is the fact that the bulk of the mixture fabrics are guaranteed fast to light and washing.

Developments in linen and rayon mixtures have not been as rapid as might have been expected, and few firms are producing these fabrics on any considerable scale. One of the booths, however, included an interesting range of linen and rayon damasks in which the rayon, the warp thread, formed the background, and the pattern was brought out in the linen, which was the weft. These were shown in both white and colors.

Among casement cloths shown by the linen firms was noticed a jacquard fabric in cotton and rayon, which gave the appearance of inlaid lace. All-rayon bedspreads in a plain weave and figured with embroidery were also featured.

There seemed to be two trends in design among the Dunfermline manufactures. Some firms showed only modernist designs which were popular last year, while others apparently believed that more natural designs would be the chief vogue for 1930. Figures of people and animals are returning into favor for damasks.

Rayon has probably made more headway in the last year in the suspender, garter, and braid trade than in any other direction. An important firm in this line states that 90% of their products now contain rayon, whereas not more than 20 to 30% did so a year ago. The rayon is mostly used as the weft or "shoot" in conjunction with a cotton warp, but its use as a warp is increasing. Practically all the rayon used in this trade is viscose. Leading corset makers were also represented at the exhibition, showing the use of a rayon and cotton mixture fabric in the majority of their products.

Rayon Laces Shown

What they describe as a "perfect-square" filet in 100% viscose rayon is the latest novelty of the Scottish lace firm, Stirling Auld & Co., Ltd. This is a plain net fabric which has been specially constructed for the Canadian market. This firm also showed cross-dyed viscose and acetate lace curtains. Rayon is prominent also among the latest Eiderdown quilting fabrics. The present tendency is to have a plain-dyed 100% rayon fabric in a plain taffeta or jappe weave embroidered in rayon in colors contrasting with the background. Some firms included novel Italian embroidery on these quiltings. The more expensive ranges are made in silk and rayon mixture fabrics. The trend in rayon bedspreads at present seems strongly to favor cotton and acetate rayon fabrics, cross-dyed, in which a wine color is prominent. The same trend of demand is evident in cushion and floor-box fabrics.

Dyestuffs Featured at the Fair

The fair also provided a good indication of what has been happening in the British dyestuffs and textile-chemical trade during the last year. Most of the firms showing this year were able to report an expanding business. The chemical section of the fair included the dyestuffs industry, the special chemicals required for washing and preparing wool, cotton, and other textiles, and a fairly full range of products used for the production of acetate, viscose, and cuprammonium yarns.

The big British combine, Imperial Chemical Industries, Ltd., had once again by far the largest stand in the exposition.

Since the last British Industries Fair they have continued to supply large quantities of chemicals for the production of rayon. Of chief interest, however, were the new dyestuffs brought out by the firm. Chloraozol Steel Blue 6B.S. was among the latest direct-cotton colors, Icyl Blue 2 R.S. and Icyl Navy B. were two new viscose colors, while Acromol Green B.S. was the latest acetate rayon color. Several additions were made by the firm to chromes.

"Abrac," a new sulphonated oil to replace Turkey-red oil, was introduced by Boake Roberts, Ltd., London, who are associated with the Shawinigan Co. of Canada. This is said to have wetting properties far in excess of Turkey-red oil, to act in the same way as any of the preparatory wetting agents, and to contain no solvent. The same form also brought out ethyl-aceto-acetate, an intermediate for yellow dyes of the tartazarine group.

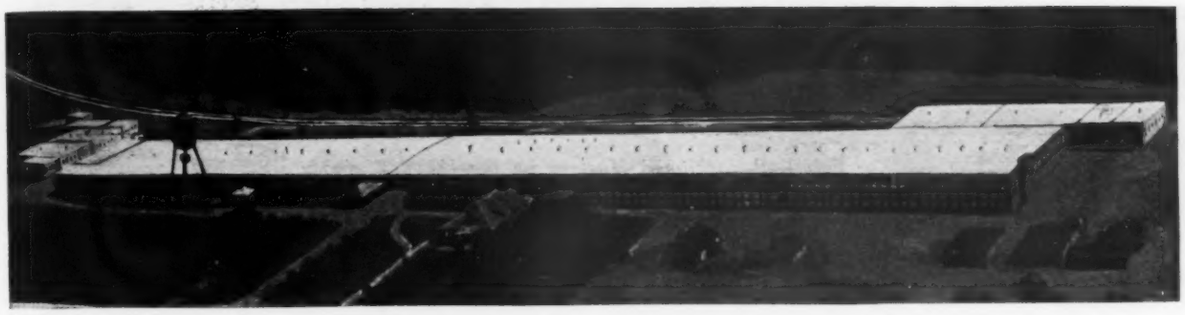
The "Scented" Finish

The above and several other chemical concerns also brought out special, exceedingly concentrated perfumes for giving a "scented finish" to textiles for various markets, notably South America.

Silicon-ester paint made from ethyl silicate has been brought out by Albright and Wilson, Ltd., of London. It is perfectly fire proof, and can be used for painting scenery on to the usual fire-proof curtain which is of course treated with ammonium phosphate. It will withstand washing, and is not even damaged in the event of a fire, provided suitable pigments are used.

Among special chemicals for the textile trade, W. J. Bush, Ltd., London, were showing aceto-acetic-ester and its derivatives, benzyl-chloride and its derivatives, benzyl cyanide, benzoic acid, benzoyl chloride, melonic ester, salicyclic acid and its derivatives, etc.

Will Spin Cotton to 200s Count



Boger & Crawford Spinning Mill, Lincolnton, N. C.

AN IMPORTANT step in spinning of cotton yarns in the United States is contained in the announcement of Boger & Crawford, Philadelphia, that they are installing machinery in their plant at Lincolnton, N. C., on which they will spin counts ranging from 140s to 200s.

As an experimental unit Boger & Crawford will install 5,000 mule spindles that were purchased in England; and if their plans proceed in the manner anticipated, it is expected that this concern will enter into this new field of cotton spinning on a much larger scale. Mr. Boger, president of the company, made a special trip abroad recently, and as a result of his study of mule spinning this step has been taken. Within the last year Boger & Crawford announced that they were spinning cotton yarns in counts as fine as 140s, and this announcement created widespread interest, being finer than southern combed spinners were going at that time.

Boger & Crawford state that in their experience with spinning fine cotton yarns in the United States to compete with counts, such as 140s, that were formerly imported from England in most instances (counts their company have been specializing in for a number of months), they are able to sell these fine numbers to advantage in this country. In view of their experiments with yarns as fine as 140s, they feel confident that they will be able to spin counts up to 200s and at the same time merchandise them profitably in competition with foreign fine yarns.

Fine As English Yarns

In England several months ago, Mr. Boger found that while a number of English spinners were equipped to turn out the finest cotton yarn counts, none of them at that time was producing counts finer than Boger & Crawford will soon be turning out at their Lincolnton plant. Although the 5,000 spindles that they have purchased will not produce large quantities of fine numbers, this step is an important one for cotton spinners, and the result of the step will be closely watched by others in the trade.

Special cotton will be used for such counts and Boger & Crawford state that they are assured of an adequate supply of uniform quality which will permit them to turn out uniform-quality yarn. They have made their plans at Lincolnton to take care of large future expansion in their fine-count department, and it is expected that in a relatively short time considerable increase in their mule-spindle equipment for fine numbers will be seen.

There are several groups of manufacturers that consume fair-sized quantities of counts ranging from 140s to 200s, and it is to this trade American spinners would expect to sell their finest counts. Hosiery manufacturers would take part of the production, using the fine cotton yarn in places on the stocking where they have found it to give better service than other yarns used to date; the lace trade would be another important market for such numbers; ribbon manufacturers are expected to consume fair-sized amounts, as are manufacturers of labels and several other lines of silk goods. If the product proves to be satisfactory in quality and comparable or better than these manufacturers have been obtaining from abroad, there are grounds for predicting that in a relatively short time American manufacturers will be buying the largest share of their finest counts, formerly secured in foreign countries, from domestic spinners.

Opposite Combed Tendency

The announcement of Boger & Crawford that they are going to produce finer counts is interesting at this particular time in view of the fact that combed spinners and mercerizers have recently reported a trend in the opposite direction so far as more standard counts of these qualities are concerned, finding that where two years ago manufacturers were specifying larger quantities of finer counts such as 120s and less of coarser counts, the opposite has been true in recent months. Combed spinners and mercerizers have been experiencing a better demand for coarser counts, while finer counts, such as 100s and 120s, have been less active.

One of the main reasons for this trend has been in larger demand for service weights of hosiery where much finer had previously been taken; but this trend, whether temporary or not, does not affect the very fine counts that are taken by other classes of manufacturers. Another reason for this noticeable trend toward coarser counts in combed and processed yarns has been in the relative scarcity of longer-staple cotton in the last American crop, forcing the differentials on long cottons to a level that brings them at present upon a cost basis that will closely compare with that of last fall, before the future cotton market declined so drastically.

In view of the fact that cotton for the finest counts that are contemplated would be imported, this trend in the domestic cotton market would not affect the spinning of counts such as 200s, the latter requiring staple that is longer than American cotton. At the present at least

(Continued on page 47)

Knitting Full-Fashioned Hosiery by the Usual Methods

Full-Fashioned Hosiery in One Operation?

LATE last year the full-fashioned hosiery trade was startled by the announcement that a manufacturer in Philadelphia had perfected a machine which would manufacture full-fashioned stockings in one operation and that a full-sized model of it was in operation in his plant. It was also stated he had applied for a patent on it. Previous to this there had been numerous reports covering a period of 25 years that such a machine had been perfected, but these proved to be untrue or immature reports so far as machinery builders in the United States and Europe were concerned.

The perfection of such a machine has been the dream of many for the last decade. While there were many who were inclined to discount the report from Philadelphia that the problems involved in the development of such a machine had been solved, it is now believed, although no official announcement has been made by large textile-machinery interests, that this development may result in accelerating the placing of such full-fashioned machines on the American market by a domestic manufacturer.

The impression is gaining ground that this long and extensively studied problem is nearing a point where it will result in definite steps being taken. In other words, the new type of machine, it is felt, will soon be taken from the theoretical stage and made an actuality on a commercial scale.

Legger and Footer Combined

The new machine, as explained by those who examined it in the plant of the Oliver Knitting Co., Philadelphia, combines the operations of the present footer and legger in one operation, being able to produce merchandise, it is asserted, fully equal to that on standard full-fashioned equipment now used throughout the country. It was also stated that the time requirel for the production of a complete full-fashioned stocking would be no longer than is now required for legging on present-type machines.

It is interesting to note that at about the same time this announcement was issued by the Oliver Knitting Co. interests, reports appeared in the press to the effect that single-head full-fashioned machines were also being perfected, and from Germany came reports that machines similar in principle to the Oliver unit were due to appear on the textile machinery markets within a comparatively short time.

These reports were naturally of the first importance to the full-fashioned hosiery trade in all countries of the world, although it is admitted that they would not on the face make the present types of equipment less desirable. The proof of this remains to be presented. Yet the fact that reports of new-type machines have been reported in so many instances within recent months has brought the matter to a point not reached before. Further interest is stimulated by the fact that manufacturers of full-fashioned goods in numerous instances are under the impression that a large machinery concern will shortly market full-fashioned machines of the new type.

Many Advantages Claimed

There would be many advantages in manufacturing stockings that at present must be manufactured on two distinct machines each of large size, on a machine that would take only a fraction of the floor space of present models. Such full-fashioned machines would permit smaller units of manufacture to be started, in that the initial cost of machines would be brought down to a basis requiring much smaller initial outlay.

Those who examined the product turned out by the Oliver interests stated that it was identical in quality with that produced on the ordinary type of multi-head full-fashioned machine. They stated the stocking had a perfect square heel, identical with that manufactured at present on standard-type machines. It was controlled by a single operator, and among the advantages that they claimed for it were savings in this labor item through the elimination of the separate operations of loose coursing, looping, and topping. The fabric was completed on the Oliver machine the report stated, by a continuous operation so that the stocking could be formed by a continuous main thread running from the welt to the toe, or through the leg, heel, and foot.

Reduced Labor Cost

It was further asserted that the new machine, being controlled by a single operator not only reduces the labor item and at the same time the number of minutes required for the operation, but materially reduces the amount of seconds which were formerly developed in the topping and footing operations. It would reduce the initial investment necessary to start a full-fashioned plant, to say nothing of the smaller floor space that the new model would require, the latter being an item of

(*Continued on page 80*)

Research Improves Textile Oils

By Ralf B. Trusler

Industrial Fellow, Mellon Institute of Industrial Research, Pittsburgh, Pa.

A TEXTILE oil, used for oiling wool fiber, frequently serves in more than one way. In the process leading to the manufacture of worsted goods, the wool is first given a thorough cleaning. This treatment results in a dry, tangled fiber; and, to prevent unnecessary breaking of the fiber, it is usually oiled with ½ to 1% of a suitable lubricant before it proceeds to the next stages of carding and combing. Since the combing operation is severe an additional 1 to 2% of oil is frequently added to the fiber to favor better lubrication. In some operations the oiling is done just prior to gilling. Often an oil emulsion is used to wet the fiber before it is spun, in order to enhance the drawing and to reduce the fly.

During the combing operation the short fibers of wool are separated from the long fiber. The short fiber, termed noil, may be blended with other short or reworked fiber and sufficient long fiber to make it very desirable for the manufacture of heavy overcoatings and certain types of woolen goods. In order to prevent further breaking of this short fiber and to hold it in place during subsequent operations, this stock for woolen goods is often heavily oiled, sometimes to the extent of 15%. After oiling the stock is carded and then generally spun directly. Owing to the production of various grades of yarns and worsted goods made from long fiber it is often desirable to store the partly processed, oiled fiber in the form of "tops" until it is needed for making a particular type of goods.

THE VALUE of research is demonstrated clearly by Dr. Trusler's article describing the results of recent investigations at Mellon Institute of Industrial Research on the properties, evaluation, and stabilization of wool oils.

During the period of storage, the oil is in the most advantageous condition for oxidation. If the oil is moderately oxidizable it will get rancid or it will become gummy. Rancid oil does not injure the fiber, but has the disadvantage of producing an unclean odor in the yarn that is difficult to wash out. On the other hand, if the oil gums on the fiber, real trouble is in store because the carded fiber will cling to parts of the machines with which it comes into contact and through increased friction will tear during the drawing, thus causing abnormal operating conditions, and if the gummy tops are to be blended with any other stock, it will result in undue tearing and shortening of the fiber. Therefore, even a moderately oxidizable oil may be very unsatisfactory and costly to use.

If the oil happens to be one that oxidizes with ease, a short interval of storage, perhaps only a day, will suffice to make the fiber sticky; and if oiled fiber is stored in sufficient quantity to provide insulation, the heat produced is accumulated only to accelerate further reaction until either the fiber is injured by charring or it actually catches on fire spontaneously.

Besides the requirements for correct fiber lubrication and freedom from oxidation, a good textile oil should be either readily saponifiable or readily emulsifiable so that it can be completely removed from textile fibers. The presence of oil in finished yarn or cloth prohibits even dyeing and this is a condition much dreaded by dyers and finishers. Oleic acid has a striking advantage over other textile oils on account of the speed and thoroughness with which it can be removed from yarn or textile since it is only necessary to add a little washing soda to the wash water. The soda combines with the oleic acid, producing sodium oleate, which is one of the finest textile soaps. Hence, besides removing the oil, this method evolves a very efficient detergent for washing the wool, and this at no extra cost for soap.

Olive oil can be completely washed out of wool if sufficient soap is used in the wash water. Even here care should be taken during rinsing not to allow the particles of oil to re-collect upon the fiber through dilution and subsequent breaking of the emulsified oil and soap solution.

There are textile-oil compositions on the market in which large percentages of mineral oil are involved. Mineral oil is cheaper than either red oil or olive oil and is therefore a tempting diluent. Sometimes the use of textile oils of this nature is a matter of plant preference. Many manufacturers of fine fabrics prefer to avoid such compositions. An inquiry disclosed that certain textile oils containing mineral oil have been favored by fire insurance companies, because such compositions have indicated a greater degree of safety according to the Mackey test, and, of course, the safety of an oil is an important matter. On the other hand, mineral and unsaponifiable oils may cause considerable trouble in the final scouring because these oils are entirely unsaponifiable and frequently difficultly emulsifiable. (*Scotch Tweed*, April, 1927, p. 233, *Textile Mercury*, 1927, No. 76, p. 246.) This obviously adds to the care required in washing since this operation should be as gentle as possible and of short duration; otherwise the appearance and texture of delicate yarns and textiles are liable to injury. It has been stated by authorities upon textile oils that unsaponifiable oil should be avoided, and if used at all, it should be present only in small quantity.

In view of the several purposes for which a textile oil must serve, oleic acid becomes the most universally adaptable. Technical oleic acid through its availability in any grade, its excellent fiber lubricating qualities, ease of removal, and cheapness in price has, through years of practical application, become an important textile oil.

Now, the one difficulty which has most hampered its universal application has been its occasional tendency toward excessive oxidation. In this respect it probably

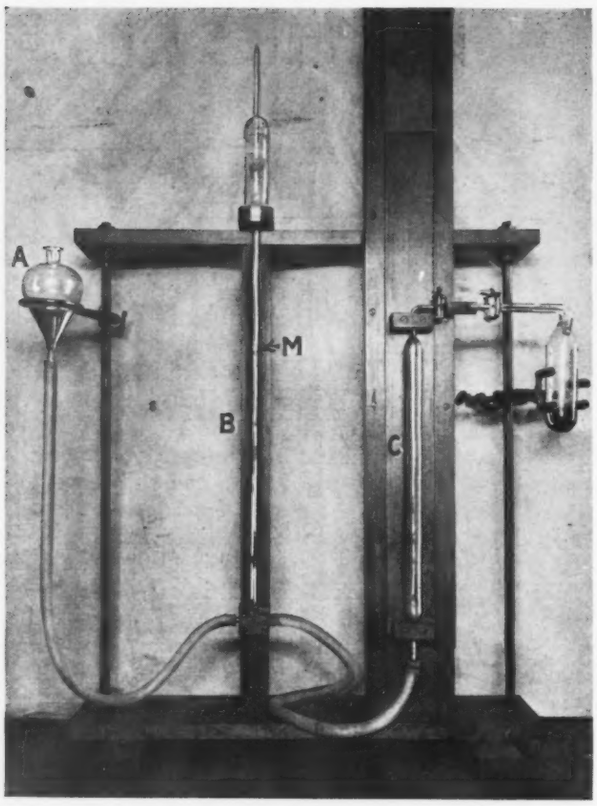


Fig. 1. Apparatus for Determining Oxidizability of Oils

has failed to fill the qualifications for textile purposes most frequently. Inasmuch as oleic acid is a domestic product and has so many desirable features for textile work, a study of means for rendering the oil resistant to oxidation and still as desirable for textile use was undertaken.

In order to determine the oxidizability of oils, some accurate means for making this measurement was required. The customary methods were tried, but each failed to meet the needs for accuracy and comparable results through wide temperature ranges, and none permitted the estimation of the efficiency of stabilizing agents which were involved in this investigation. It was therefore necessary to devise a method suitable for this investigation.

Apparatus for Testing Oils

The apparatus that was finally adopted for this investigation is shown in Figs. 1 and 2, and consists of three parts: (1) the reaction bulb, (2) the gas-measuring device, and (3) the shaker. The reaction bulb in which the sample of oil and oxygen is contained, is made of pyrex glass and is approximately 138 mm. long and 40 mm. in diameter. It has a capacity of about 130 c.c., sufficient to accommodate 100 c.c. of oxygen and 25 grams of oil used in the test.

The gas measuring device comprises a leveling flask, *A;* a manometer, *B;* and a gas burette, *C*. The leveling flask contains sufficient mercury to fill the tubing, to maintain a column in the manometer, and to fill the gas burette, and is adjustable to any level.

The manometer *B* serves as a means for attaining a standard pressure in the gas burette when a volume of oxygen is to be determined. The manometer is calibrated so that when the mercury columns in it and in the burette are level at the mark, *M*, the burette contains 100 c.c. of oxygen. The gas measuring device is a standard 100 c.c. burette which has been provided with a stop-cock. The burette is fastened to a movable back which slides up or down and can be held at any elevation by means of a thumb screw.

The shaking device (Fig. 2) provides the means for oxidizing oils under conditions that can be controlled and duplicated. This is accomplished by causing thorough contact between an oil and oxygen contained in the bulb while it is shaken in a heated oil bath. A series of experiments resulted in the choice of one hour for the time of shaking at the rate of 140 shakes per minute.

Method of Applying Test

To examine an oil for its behavior toward oxidation, the first step is to put 25 grams of the oil in the reaction bulb. The bulb is then thoroughly exhausted of air. Next, the burette is filled with oxygen and leveled with the calibration mark. It then contains 100 c.c. of oxygen. Then the evacuated bulb containing the specimen of oil is connected to the burette and the 100 c.c. of oxygen is transferred to the bulb. The bulb is then fastened in the shaker and shaken for one hour at the temperature chosen for the test. After this it is removed, wiped dry, and again attached to the burette which has been somewhat elevated. In order to measure the amount of unused oxygen, it is transferred to the burette as it is displaced from the bulb with oil from a supply bottle. After all of the oxygen is drawn into the burette, the bulb is detached and the burette is again leveled so that its mercury column and that of the manometer are at the height *M*. The volume of oxygen taken up by the oil can be read directly.

If a series of such runs is made upon an oil at about 5° C. intervals, a set of corresponding values of oxygen absorption (oxidation) will be obtained. By plotting temperature against the corresponding absorption, the curve depicts graphically the oxidizability of the oil (Fig. 3).

Information on Methods

Important information bearing upon this method for examining oils is revealed by such curves. A difference in the rate of oxidation at ordinary temperatures can be measured with ease and accuracy without first heating to 100° (as in the Mackey tester) or higher with the consequent destruction of any naturally occurring, low-temperature antioxidants. It also demonstrates that oxidation is accelerated by increased temperature. The reliability of this method over a wide temperature range for indicating the susceptibiilty of an oil to oxidation is shown by the nearly straight curves from the point where oxidation becomes rapid up to where less than 20% of the original volume of oxygen remains in the bulb, and even more strikingly by only moderate deviation in the rate of absorption until scarcely more than 2 c.c. of gas is left and the pressure of the gas in the bulb has dropped to about 4 centimeters.

Duplicate tests upon oils and check runs at various temperatures were frequently made in order to note the accuracy and consistency of this method for examining oils for their tendency toward oxidation. It was found that with ordinary care taken in exhausting the bulb, protection against leaks and in leveling the burette, results can be easily duplicated to within 2 c.c. (approximately 0.2%) deviation. In some cases moisture affects

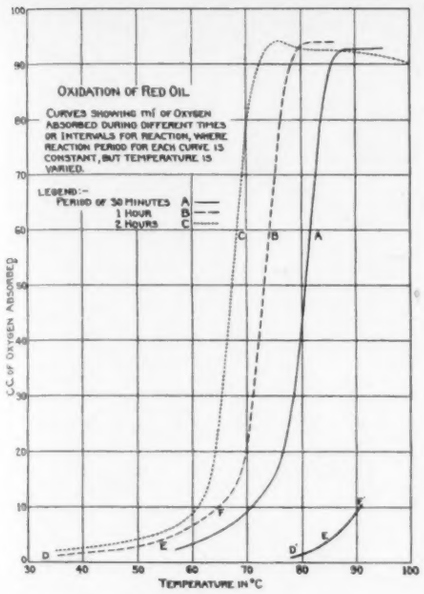

OXIDATION OF RED OIL
CURVES SHOWING ml OF OXYGEN ABSORBED DURING DIFFERENT TIMES OR INTERVALS FOR REACTION, WHERE REACTION PERIOD FOR EACH CURVE IS CONSTANT, BUT TEMPERATURE IS VARIED.
LEGEND:—
PERIOD OF 30 MINUTES A
1 HOUR B
2 HOURS C
CC. OF OXYGEN ABSORBED
TEMPERATURE IN °C

Fig. 3

Table I. Constants of Red Oil

Oil No. (Fig. 4.)	Titer °C.	Unsap. %
1	8.9	2.15
2	9.3	3.52
3	11.1	2.81
4	6.6	1.86
5	9.4	3.79
6	7.8	2.62
7	8.9	2.12
8	10.6	3.89
9	9.2	3.63

Oil No. (Fig. 4)	Iodine No. (Hanus)	F.F.A.
1	85.7	91.42
2	88.7	95.97
3	80.6	85.74
4	86.3	86.52
5	89.1	96.50
6	87.0	92.00
7	87.0	97.68
8	84.5	94.74
9	88.0	95.97

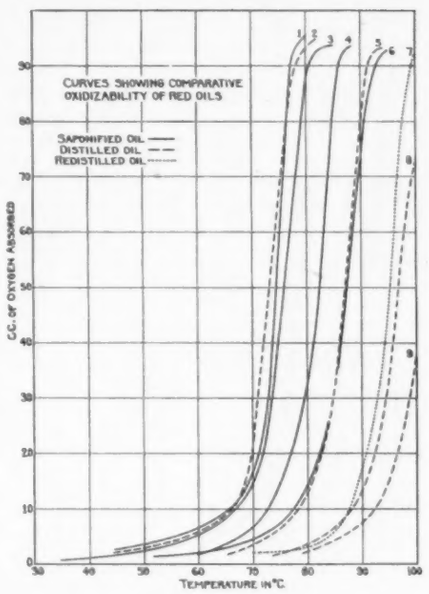


Fig. 4

the results, and it is therefore advisable to employ dry oils.

Interpretation of Results

Referring to the case illustrated by the curve, Fig. 3, the portion *D, E, F* designates the conditions for moderate oxidation. Below 54° (at *E*) oxidation takes place at a comparatively slow rate. From *E* to *F*, or from 54° to 65°, the oil is more reactive, while above 65° oxidation becomes rapid. If this oil were used in some technical process wherein it would be spread out in thin films and well insulated, as in the case of certain textile operations where considerable amounts of wool, for example, may be oiled for lubrication during the stages of processing, oxidation would be enhanced owing to large surface contact with atmospheric oxygen.

Supposing that another textile oil was found to be more resistant to oxidation and could be represented by the hypothetical curve *D'E'F'*. In this case, appreciable oxidation would occur only at 85° *(E)*. Owing to an increased dispersion of heat at higher temperatures, there is little probability of oiled fiber reaching this temperature with the meager amount of heat accumulated from such a slow rate of oxidation, and the possibility of reaching *F* becomes remote. Therefore, while the oil represented by the curve *B* is a possible hazard, an oil whose susceptibility to oxidation might be shown by a curve like *D'E'F'* could scarcely be a source of danger from spontaneous and rapid combination with oxygen.

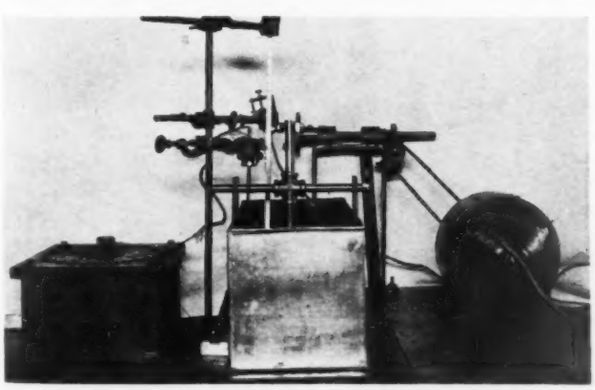


Fig. 2. Shaking Device for Oxidizing Oils

Technical oleic acid, known in trade as red oil, elaine, elain, oleine, and sometimes as wool oil, is a widely used and important textile lubricant. It may be obtained as "saponified red oil" which is the undistilled variety, and as "distilled red oil" which has been distilled one or more times. The particular grade chosen by a textile mill for oiling fiber depends largely upon individual requirements, although either one is frequently interchangeable.

Commercial Red Oil

Authentic samples of 27 red oils were obtained from manufacturers of this commodity and were tested according to the above method. In order to avoid confusion, curves for only nine of these oils are given in Fig. 4. All of the curves possess the same general appearance, and of all of the oils examined No. 2 represents the extreme in ease of oxidizability and No. 9 shows the most resistance. The data for the eighteen other oils give curves falling between Nos. 1 and 9. One of the striking features of these data is the absence of segregated groupings of curves for the three different grades of oil. While "distilled oil" may be less oxidizable than any "saponified" grade, there is no assurance that it will be, and there is always a possibility that it may be more susceptible. An explanation of the variability in the behavior of these oils toward oxygen was sought in the determination of their more general constants, which are shown in Table I.

These data, together with many others extending through a period of three years' investigation, fail to show any relation between the oxidizability of a red oil and either the iodine number or the unsaponifiable ingredient. It has been shown that certain metallic soaps, such as iron and copper, increase the reactivity of commercial oleic acid, this being particularly marked in the case of iron. Contact with metallic parts of plant equipment, storage tanks and shipping containers suffices for this contamination. The catalytic oxygenation of fatty oils by metallic impurities is quite general. Davies *(Chemistry and Industry,* 1928, No. 47, p. 185T) reports such a condition as one of the causes of the occurrence of rancidity.

In some instances it has been found that sulfonates and organic sulfur compounds make oleic acid more sensitive to the action of oxygen. It was also suspected

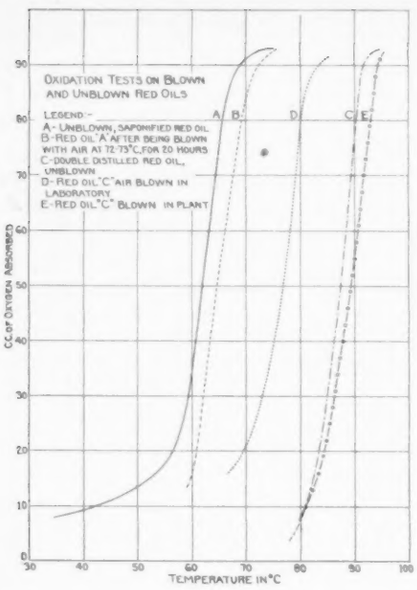

OXIDATION TESTS ON BLOWN AND UNBLOWN RED OILS
LEGEND:-
A-UNBLOWN, SAPONIFIED RED OIL
B-RED OIL "A" AFTER BEING BLOWN WITH AIR AT 72-73°C. FOR 30 HOURS
C-DOUBLE DISTILLED RED OIL, UNBLOWN
D-RED OIL "C" AIR BLOWN IN LABORATORY
E-RED OIL "C" BLOWN IN PLANT
CC. OF OXYGEN ABSORBED
TEMPERATURE IN °C

Fig. 5

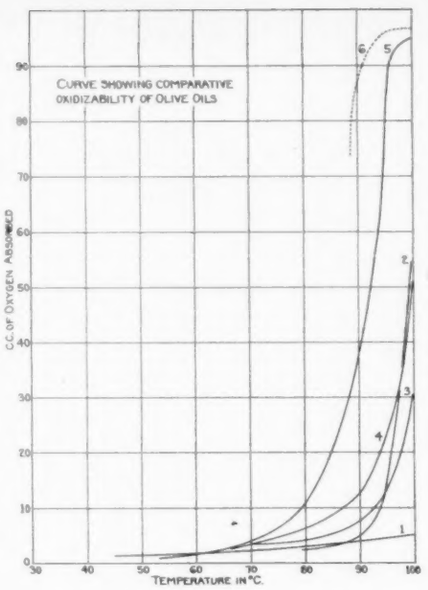


Fig. 6

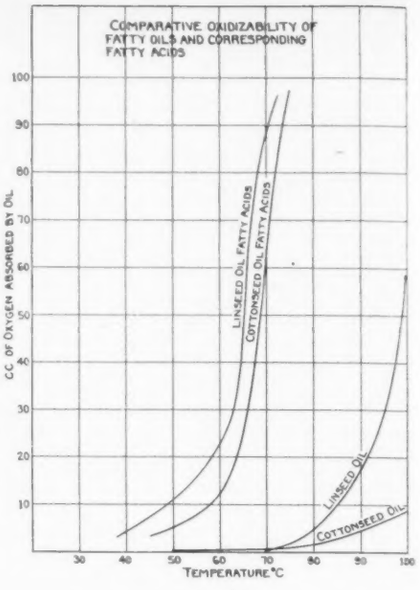

COMPARATIVE OXIDIZABILITY OF FATTY OILS AND CORRESPONDING FATTY ACIDS
LINSEED OIL FATTY ACIDS
COTTONSEED OIL FATTY ACIDS
LINSEED OIL
COTTONSEED OIL
CC. OF OXYGEN ABSORBED BY OIL
TEMPERATURE °C

Fig. 7

that the oils were frequently rendered less stable by the method of drying. It is common practice to heat an oil from 20° to 80° and then to blow it with air to expel moisture. The treatment brings about some degree of oxidation as indicated by the lowering of the iodine number, and the question naturally arises whether or not this slight pre-oxidation is catalytic in promoting the effects subsequently experienced. In order to determine this point, two specimens of oil, one saponified and not distilled and the other double distilled, were blown with air in the laboratory at 72 to 73° C. for 30 hours. The double-distilled oil was similarly treated in the plant, though with less air.

The results of the treatments are shown by the curves in Fig. 5. The unblown, saponified oil is represented by *A* and after air blowing it is shown by *B*. The unblown distilled oil oxidized according to curve *C*, while after the plant treatment it is represented by *E*. In both instances the stability of the oil was enhanced by air blowing. However, the quality of an oil may be impaired by improper blowing. Too high temperature (even only a few degrees) can cause the picture of an oil to change from *C* to *D*. The proper amount of blowing to secure the maximum resistance to oxidation can be easily determined by occasionally conducting an oxidation test upon samples of oil taken from a batch in process. Until all of the facts are understood, decreasing or removing the causes contributing to the reactivity of the oil in the presence of oxygen cannot be readily done during the processing of commercial oleic acid. But this is not necessary because the use of proper stabilizers overcomes all of the objectionable features associated with oxidation.

Tests on Olive Oil

Commercial olive oils used for textile oiling are imported from southern Europe. They consist of the poorer grades of olive oil which would scarcely be considered edible, and are obtained by hot pressing olive meal and seeds, and commonly by extracting the press residues with naphtha or some other solvent. In order to escape the duty imposed on edible oils, the low grade olive oils are further rendered unfit for refining by flavoring with some denaturant. The material used for this purpose at present is oil of rosemary. All extracted oils examined in this work were found to contain traces of the solvent medium.

Table II. Constants of Olive Oil

Olive Oil No. (Fig. 20)	1	2	3	4	5
% F.F.A.	2.75	4.21	5.34	5.79	4.19
Iodine number	82.3	87.3	83.6	83.5	80.2

For certain finishes in woolen textiles, commercial olive oil is the preferred fiber lubricant. In recent years this oil has been frequently used in place of oleic acid (red oil) in the carding and drawing stages, although it is generally more expensive and certainly less easily and less completely removed from wool fiber at the desired occasions. The chief reasons for oiling textile fibers with olive oil appear to be twofold: (1) to reduce the injury to the fiber through gumming when the oiled fiber is stored before processing; (2) to reduce the danger of spontaneous fires in textile plants.

The first reason—that of the reduction of gumming—has arisen from plant experience, as there have been instances where oiled fiber became too gummy for economical use when the fiber has been oiled with certain grades of oleic acid and stored for indefinite periods. This same experience has been reported when olive oil has been used, though to a less extent. The effect of oxidation upon technical olive oils occasionally produces objectionable rancid odors instead of gumminess.

The second reason for employing olive oil in place of technical oleic acid has been a safety measure against fire promoted by several fire insurance companies. The reason for this recommendation is that the empirical tests upon olive oil have indicated it to be less subject to excessive oxidation than red oils and therefore less liable to cause spontaneous fires.

If olive oils are to be compared with oleic acid for their degree of oxidizability they must be examined by the same method in all cases. Eight representative samples of commercial olive oils were obtained from textile mills and from supply houses.

These oils were carefully dried and freed from dissolved solvent under vacuum at about 50° so that no deleterious effects might come from these sources, and then exam-

ined according to the method applied to red oils. Curves plotted from the oxidation data are shown for five of these oils (Fig. 6). The oil most resistant to oxidation is indicated by 1, and 5 is the curve for the most easily oxidized. Curve 6 is incomplete owing to the smallness of the sample. An effort was made to obtain more of the same oil in order to complete the curve, but this could not be done because the oil in storage had been changed in the meantime.

Here again, we encounter wide differences in the character of a kind of oil that one would expect to be uniform, excepting perhaps in the amount of free fatty acid (sometimes termed acid number) which often increases with time of storage. The ease of oxidation of an oil is enhanced by the presence of free, unsaturated, fatty acids. This condition was verified by Aspegren *(Oil and Fat Industries,* 1929, No. 6, p. 19), who, in a series of elaborate experiments, has shown that cottonseed oil becomes more sensitive to oxidation as its free linoleic acid content is increased. The ease with which a free fatty acid oxidizes compared with the original fatty oil from which it was derived is shown in the curves for cottonseed oil, cottonseed oil fatty acids, linseed oil and linseed oil fatty acids (Fig. 7). The fatty acids were prepared from the fatty oils by the usual process of alkali saponification in alcohol with the subsequent liberation of the fatty acids by neutralization with dilute sulfuric acid.

In the case of the olive oils examined, the variability in their reactivity to oxygen is not exactly explained by either free fatty acid content or by iodine number, as shown in Table II.

The usual tests upon an olive oil do not assure the purchaser that the oil is going to be good or bad, as shown by Fig. 6. The fact that olive oil constitutes the textile lubricant is no guarantee of safety against spontaneous combustion, charring, or gumming, for while one may purchase an olive oil as good as No. 1 (Fig. 6) he risks the chance of getting a highly reactive oil like No. 5, or possibly as bad or worse than No. 6.

Stabilization of Oleic Acid

Since Moureu and Dufraisse announced the discovery of antioxidants, intensive research and progress have been made in controlling almost every reaction involving oxidation. The problem of rendering oleic acid inert to oxygen is obviously also one concerning antioxidants, and was pursued in this part of the investigation.

Numerous compounds, usually of phenolic type, have been observed to inhibit the oxidation of other compounds. Although the protective action of many of these has been mentioned, there has been no satisfactory means for classifying them accurately in regard to their efficiency. It was previously mentioned in the discussion of the special oil-testing apparatus that besides being a means for studying the oxidizability of oils, it provided a method for comparing the efficiency of various antioxidants. This is accomplished by using exactly the same method as described for examining oils, and requires only the comparison between tests upon an oil with and without an antioxidant. For example, a blank test upon one of the most easily oxidized red oils showed that at 85° for one hour, 94 cc. or 94% of the original 100 cc. of oxygen in the bulb were absorbed by the oil through oxidation. Now, let 0.5 gram of an antioxidant be dissolved in 100 grams of the same red oil, the bulb filled with a 25-gram sample and a new test made. Supposing that after an hour of shaking (one hour being standard throughout) at 85°, the measurement of the oxygen remaining in the bulb revealed 80 cc. Then

$\frac{80}{94} \times 100 = 85.1\%$ may empirically designate that the antioxidant was 85.1% efficient by reducing the amount of oxygen absorbed from the blank of 94 c.c. to 20 c.c. In the series of determination tabulated in the following table, the same supply of red oil was used throughout and the values of the various compounds as antioxidants are reported in per cent efficiency according to the above calculation.

Table III. Efficiency of Compounds as Antioxidants

Name of Compound	Per Cent Efficiency	Name of Compound	Per Cent Efficiency
Furfural	0.0	αEthyl B Propyl Acrolein	2.8
Quinoline	0.0	Lacithin	3.2
Phenetol	0.0	o-Toluidine	3.3
B-Phenoxyethanol	0.5	Methylenedip-peridene	3.4
Xylene	0.5	A commercial antioxidant	4.7
Toluene	0.5	o-chlorephenol	28.9
2-4 Dichlorophenol	0.5	p-chlorophenol	39.6
Isopropylbenzene	0.6	2-Chloro—5 hydroxytoluene	52.3
Carbazol	0.4	Tetramethyl diphenylquanidine	64.5
Diphenylsulfone	0.9	p-amino-phenol	67.5
p-Nitrophenol	0.9	Phenol	68.2
Terpineol	0.9	Resorcinol	73.2
Salicylic acid	1.0	Benzidine	74.5
Benzaldehyde	1.0	m-Cresol	77.0
Dichlorodiethyl ether	1.0	b-Naphthol	78.8
B-Hydroxyethylcyanide	1.0	Pyrogalol	80.0
Pyridine	1.1	p-Toluene	82.8
Aldol	1.2	αNaphthylamine	83.1
Paraldehyde	1.3	o-Cresol	83.1
Benzyl alcohol	1.5	p-Cresol	85.6
Cycle hexanol	1.5	B-Naphthylamine	88.2
o-Nitrophenol	1.5	Diphenylamine	89.7
Formamide	1.7	Pyrocatechol	91.8
Diphenyloxide	1.8	αNaphthol (0.25%)	94.2
Ethanolamine	1.9	Hydroquinone	94.8
Thiocarbanilid	1.9	αNaphthol (0.5%)	98.2
Diguanidine	2.1		
Aniline	2.8		

These determinations revealed some surprises because a few compounds exhibited unexpected efficiency, while some antioxidants commonly considered the best did not show up so well. The change in efficiency with the change in the relative positions of two groups, as CH_3— and HO—, and the effect of negative groups in various positions in respect to HO— and other groups is extremely interesting. A discussion of these phenomena is scarcely within the scope of this paper. The data show that certain phenolic and amino compounds have marked antioxygenic properties when they are in solution in oleic acid.

These same relative efficiencies hold well for neutral fatty oils also.

A high rating of efficiency does not necessarily mean that the compound is a desirable antioxidant for this particular application. It is equally important that an antioxidant will not change the oil in color or odor and that it will not have any action upon fiber, dyed or undyed, or be lost through volatilization. In other words, excepting for becoming inert to oxygen, the textile oil must otherwise remain unchanged. In view of the nature of the application of textile oils, it becomes immediately obvious why a small amount of a very efficient antioxidant is preferable to a larger amount of a less potent stabilizer.

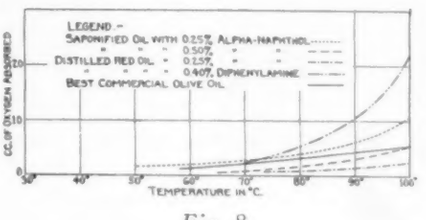


Fig. 8

Certain compounds having antioxygenic ability are not useful in all conditions of service. Oleic acid stabilized with hydroquinone, pyro-

(Continued on page 80)

Many New Silk Mills and Full-Fashioned Hosiery Plants in the South

By Ralph C. Maultsby
Southern Editor, TEXTILE WORLD

SILK manufacturing gained additional momentum in the South, particularly in Virginia, North Carolina, and Tennessee, during 1929. Not only was there an increased migration of broadsilk weaving and full-fashioned hosiery enterprises from other sections, but a large number of new plants were established by local capital and many existing mills were enlarged.

Diversification of Industry

Until recent years, one of the dangers in the industrilization of the South has been the lack of diversification, not within the textile industry alone, but in other manufacturing enterprises as well. More intelligent study and increasing consideration have been devoted to the problem of plant location, and the tendency has been for communities to attract only those industries that will find advantageous conditions for manufacturing and marketing their products.

The transfer of textile mills to the South in recent months has been more marked in the manufacture of silks, including full-fashioned hosiery, silk braid, and specialty fabrics, than in concerns manufacturing staple cottons. The location of large rayon plants in Virginia, North Carolina, Tennessee and Georgia has served to further diversify the textile manufacturing in those states.

Virginia Pioneer Silk State

With the exception of an area in southwestern Virginia, which includes the towns of Danville, Fieldale, Fries, and Martinsville, that state has not developed in the field of cotton manufacturing on a plane comparable with the Carolinas and Georgia. It was the pioneer southern state in the manufacture of broadsilks, however, and has held the leadership in this respect until the last year or so, when Tennessee and North Carolina have come to challenge this distinction. Additional silk looms were installed in Virginia mills during 1929, while silk-throwing operations were increased at the Orange (Va.) plant of American Silk Mills and started at the Blackstone (Va.) plant of Klotz Silk Mfg. Co.

Virginia Maid Hosiery Mills, Inc.
Located at Pulaski, Va.

Hudson Silk Hosiery Co., Inc.,
Located in Charlotte, N. C.

One of the most modern full-fashioned hosiery plants in the country is that of the Virginia Maid Hosiery Mills, Inc., at Pulaski, Va., the first unit of which was completed in April, 1929. The full-fashioned plant owned by Marshall Field & Co., at Fieldale, Va., was enlarged and the installation of 22 additional machines undertaken during the year.

There are three other full-fashioned hosiery manufacturers in Virginia, located at Bristol, Lynchburg, and Petersburg. The Lynchburg (Va.) Hosiery Mill was established in 1929.

North Carolina Forges Ahead

North Carolina, which is by far the leading southern state in the production of full-fashioned hosiery, exhibited more rapid development in that branch of the industry in 1929 than in previous years. The first full-

Second Floor of Mock, Judson, Voehringer Co.'s Full-Fashioned Knitting Plant Located at Greensboro, N. C.

fashioned plant to be erected in North Carolina was completed in 1921, and since that time the industry has grown with astonishing rapidity in that section. There are now, either projected or already in operation, some 37 full-fashioned plants located in North Carolina, the majority of which are in or near the towns of Durham, Burlington, Greensboro, High Point, and Charlotte.

Leading Full-Fashioned Plants

Several of the hosiery plants are operating more than 50 full-fashioned machines, while two or three concerns have twice that number installed at the present time and others are adding equipment just as quickly as the machinery manufacturers can make deliveries. Among the most important full-fashioned plants in the Tar Heel state, from the standpoint of quantity production, are the Golden Belt Mfg. Co., and the Durham Hosiery Mills, Durham, N. C.; Mock, Judson, Voehringer Co., Greensboro, N. C.; Adams-Millis Corp., High Point, N. C.; May Hosiery Mills, Inc., and Standard Hosiery Mills, Burlington, N. C.; Hudson Silk Hosiery Co., Inc., and Nebel Knitting Co., Charlotte, N. C.; and the Knitting Department of Wiscassett Mills Co., Albermarle, N. C. Every one of these concerns engaged in expansion programs during 1929.

The enormous increase in the knitting and weaving of silk in the southern states has provided an opportunity for developing silk throwing in that section also. Several enterprises of that kind were established or enlarged during the year. Among the new companies engaged in silk throwing in North Carolina are the Dixie Throwing Co., of Greensboro; the Cetwick Silk Mills, Inc., of Asheboro; and the Spindale Silk Co., of Spindale.

South Carolina and Georgia

Silk manufacturing has not been developed to any considerable extent in South Carolina and Georgia, but the tendency in those states more recently has been toward a diversification of products. Considerable expansion in the printing and finishing of cotton and rayon goods has taken place in South Carolina and Georgia on a large scale.

The first full-fashioned hosiery plant to be established in South Carolina was completed at Rock Hill in 1929, while several machines were installed at another mill in the state which had engaged in the manufacture of a variety of products, including cotton yarns, wide sheeting and seamless hosiery. The Richmond Hosiery Mills, at Rossville, Ga., completed a $250,000 addition to their full-fashioned plant and have announced further expansion plans for 1930.

Alabama and Tennessee

Alabama and Tennessee have made notable headway in securing new silk manufacturing enterprises as an important means of diversifying in the field of textiles. Broadsilks are woven in modern plants of the Brewton (Ala.) Silk Mills Corp., and the Kingsport (Tenn.) Silk Mills, which were placed in operation during the past year.

Silk hosiery manufacturers to locate plants in the South in 1929 included Lengel-Fencil Co., at Anniston, Ala.; Everwear Hosiery Co., at Chattanooga, Tenn.; Cadet Knitting Co., at Columbia, Tenn.; and the Alabama Hosiery Mills, Inc., at Decatur, Ala. Additions of machinery, representing investments of several hundred thousand dollars, were made to the full-fashioned plants of Magnet Mills, Inc., Clinton, Tenn., and the Davenport Hosiery Mills, Chattanooga, Tenn. New plants were established in 1929 by the Walter Fred Hosiery Mills, Inc., Nashville, Tenn., and by the Debonair Hosiery Mills, Cleveland, Tenn., for the manufacture of full-fashioned hosiery.

An indication of the increasing development of full-fashioned hosiery knitting in the South, which has been an important factor contributing to the diversification of southern industry, is shown by a report from the Textile Machine Works, Reading, Pa., a leading manufacturer of full-fashioned knitting machines. This report reveals that during the first eight months of 1929, of 51 new plants established for the manufacture of that type of hosiery, 26 were located in the southern states. Based upon information since the above report was published, it is predicted that 1930 will show a further expansion of the full-fashioned hosiery industry, as well as other branches of the pure-silk textile manufacturing, including weaving, in numerous parts of the South where the trail has already been blazed.

Preventing Formation of
Faulty Cops on Cotton Mules

By William King

GREAT difficulty is experienced at intervals in making all the mules in a spinning room produce cops that conform to the desired standards. This entails a considerable loss in production and much trouble when winding the yarn in subsequent processes. The aim of this article is to describe the general copping faults, and explain how they may be overcome.

Although the copping mechanism is directly responsible for building the yarn on the bare spindle in cop form, outside influences—such as the setting of quadrant, setting of unlocking bracket, setting of depressing finger, position of back scrolls, counts being spun, etc. —all bear on the subject. Even when the copping mechanism is operating efficiently, these influences sometimes have such an adverse effect on the running of the mule that production is reduced and the finished article is decidedly unsatisfactory in shape, construction, and quality.

For the purposes of this article it will be advisable to divide the matter into three sections; viz., the copping mechanism, factors influencing shape of cop, and faults in cops.

RECENT reports to the effect that American spinners are seriously contemplating producing cotton yarns in counts as fine as 200s seem to indicate that the demands on the cotton mule for accuracy and satisfactory operation will be more exacting than ever.

The Copping Mechanism

As the carriage moves out, the rollers deliver yarn, and twist is inserted by the revolving spindles. When the carriage reaches the end of the outward run and extra twist is inserted into the yarn (if necessary), the mule is ready for backing-off. The backing-off friction serves to gear and reverse the rim shaft, and through the rim pulley and rim band yarn is uncoiled from the spindles. As this is being done, the winding faller moves down to the winding position and the counter faller rises to hold the yarn at the required tension.

When the fallers are locked—that is, when the locking lever is on the trail-lever roller—the taking-in friction is allowed to gear and revolve the back scroll shaft, causing the carriage to be drawn in by means of the back scroll band. Thus the process of winding begins when backing-off has finished, and ends when the carriage reaches the back stops. The position of the yarn on the spindles is determined by the height of the winding faller wire after locking has taken place, the traverse of the wire, and the point at which it finishes.

The sector *A* in Fig. 1 is keyed to the winding faller shaft *B*, and this shaft runs the length of the mule and carries a number of arms. The wire which guides the yarn on to the spindles during winding passes through the end of each arm. Usually the setting of these arms is not disturbed except when the mule is overhauled. During the backing-off process the tin-roller shaft *P* revolves in the opposite direction to when spinning to uncoil the yarn from the spindles, and immediately this begins the plate wheel *R* revolves and winds the chain *O* on to itself. This pulls the sector down, and the locking lever is lifted until its bottom portion rests on the trail-lever roller *D*.

The roller *H* on the trail lever runs on the copping rail; and, the trail lever being fulcrumed at *L*, the roller *H* follows the line of the copping rail and transfers the movement to the locking lever *C*. Thus the height of the winding faller wire is controlled by the profile of the rail.

Altering Height of Yarn

It is sometimes necessary to alter the height of the yarn on the spindle at the beginning of a set of cops. This is done by altering the adjusting screw on the locking lever *C* and shifting the position of the bottom portion of the lever. After alteration the fastening nut should be well tightened to prevent the bottom portion coming loose and spoiling a set of cops. If sufficient alteration cannot be made with the set screw on *C*, then the trail-lever roller *D* may be altered. During winding, the locking lever remains in position until the carriage is about 3 in. from the back stops, when the bottom end of the arm *F* comes into contact with the unlocking bracket and the locking lever returns to its former position ready once more for the next outward run of the carriage.

In Fig. 2, point *J* on the top of the copping rail is known as the "ridge of the rail." This is always the highest point of the rail and consequently represents the lowest point on the spindle where yarn is wound during the first draw of a new set of cops. As the cop builds, the ridge of the rail still represents the lowest point at which yarn is wound on the spindle during each draw. The point *K* of the rail, being always lower than point *J*, and the lowest point of the rail, must always represent the highest point at which yarn is wound on the spindles during each draw.

It will be seen from Fig. 3 that the shaper gear *A*, being moved one tooth each draw by a catch worked from the quadrant, will rotate the shaft on which it is fastened. This shaft passes through a projection which is part of the front plate; and, the shaft being screwed into this projection, each revolution of the shaft must

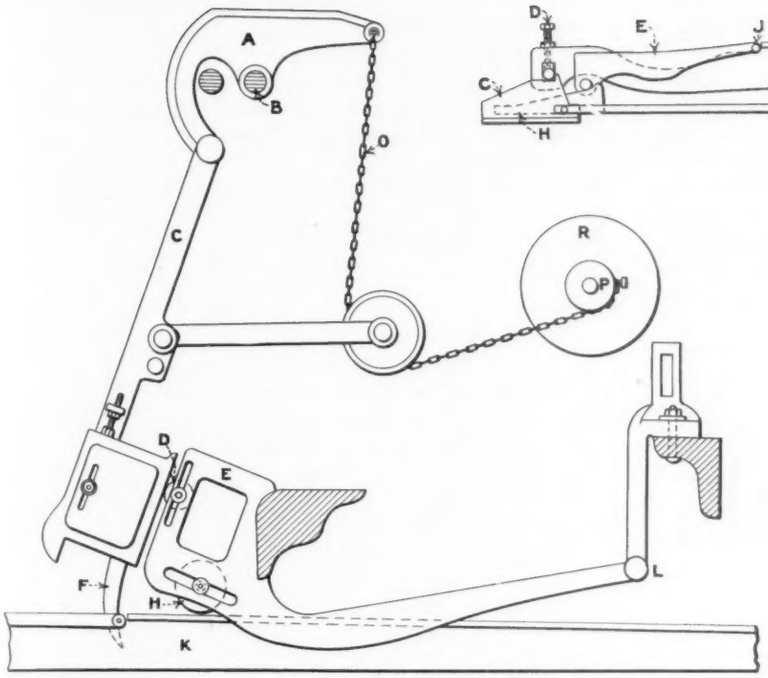


Fig. 1

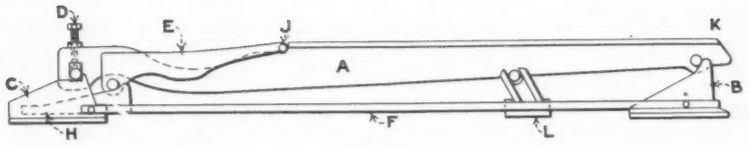


Fig. 2

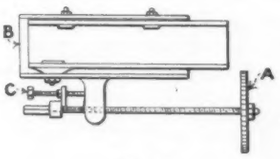


Fig. 3

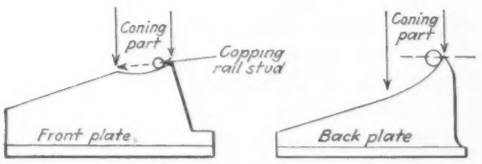


Fig. 4

move the front plate a certain distance. At the beginning of a set of cops, as soon as the shaper catch is put in action, the front plate is moved slightly to the back of the headstock for each draw that is made. The front plate *C* in Fig. 2 is connected by means of a rod *F* to the back plate *B*, and any movement it makes is transferred to *B*.

With both plates moving a little each draw, the rail *A* gradually drops, and the bowl in *L* keeps it up against the plates *C* and *B*. It will be noticed from the profile of these plates, shown distinctly in Fig. 4, that as the plates move and the rail drops, the fall of the rail will be greater at point *K*, Fig. 2, than it will be at the ridge of the rail. This means that the cone of the cop will increase in length from the beginning until the cop bottom is formed. When the cop bottom is formed, the fall of the rail should be gradual and steady, and a cop of equal diameter built up.

The coning part on each plate is shown in Fig. 4, and the amount of coning part that is used on the front plate—that is, the distance the stud in the end of the rail has to travel before it reaches the end of the coning section on this plate—determines the length of the bottom cone of the cop. Therefore the setting of the front plate regulates the length of the bottom cone of the cop. If this cone is short and requires lengthening, this can be done by turning out the adjusting screw *C*, Fig. 3, and winding the front plate toward the front of the headstock, until sufficient of the coning part is in action. This alteration must be made at the beginning of a set of cops. The back plate must then be set so that the center of the stud in the end of the rail is level with the top of the plate. This plate is adjustable and can be moved forward or back.

Starting a New Mule

As an example the method followed when starting a new mule will be of interest. The following table will provide a suitable working basis for setting the front plate for the amount of coning part to be used. The front plate measurement is from the copping-rail stud to the end of the coning part, as shown in Fig. 4:

Cops	Platts' Mules Front Plate	Asa Lees' Mules Front Plate
Twist 1¼ in. dia.	1 5/16 in.	1½ in.
Bastard 1 in. dia.	1 in.	1½ in.
Weft ⅞ in. dia.	⅝ in.	1 1/16 in.

When the front plate has been set, the rail may be set to give the correct length of chase, or length of yarn to be wound on the spindle the first draw. This is done by means of the adjusting screw *D* shown in Fig. 2. If the screw is turned out, this will allow the front end of the rail to fall and reduce the amount of bevel in the rail, and thus shorten the chase. If it is screwed in, the chase will be lengthened.

To test the mule for length of chase when there is no yarn on the spindle, the mule must be on the inward run with the trail-level roller on the ridge of the rail. The distance from the top of the spindle to the winding faller wire must be measured and noted. The mule can then be drawn up until it is on the point of unlocking, and the distance again measured. The difference between the two measurements will be the length of the chase. In the finished cop the length of the chase is the length of the upper cone; and, generally, the chase at the beginning of the cop—the first six draws after starting—is much shorter than at the finish. In starting a new mule the chase is made according to the requirements of the spinning firm. Some remarks on the ideal cop will be made later in the article. Having set the front plate for coning, and the adjusting screw for chase, the back plate may be set in the correct position.

In actual practice it has been found that when the center of the stud in the back end of the copping rail is level with the top of the back plate, good general results are obtained. The writer does not claim this as a rigid setting. It is a good basic setting which can be modified to suit circumstances. When the back plate has been set, it will be advisable to go over the whole three settings again, as altering the back plate may have made the two former settings untrue. The locking

plate *H* in Fig. 2 may then be set. The position of the loose incline *E* is regulated by the position of the locking plate *H*. There is plenty of scope for adjustment of this plate. The best position is that which gives a good hearty lock, and the winding faller wire should be just below the center of the chase of the cop when the fallers lock.

Factors Influencing Shape of Cop

The quadrant, by means of a wire and catch, gives movement to the shaper or builder gear during the inward run of the carriage. This movement causes the shaper screw to revolve, and this in turn moves the copping plates. The shaper gear contains a number of teeth, and the number varies according to the diameter of cop desired, a large tooth giving more movement to the plates than a small one. For a mule spinning a certain count, the correct gear can only be found by trial, but when this has been found, the following rule may be used to find the builder gear for another count: Multiply present gear by square root of counts required, and divide by square root of present counts.

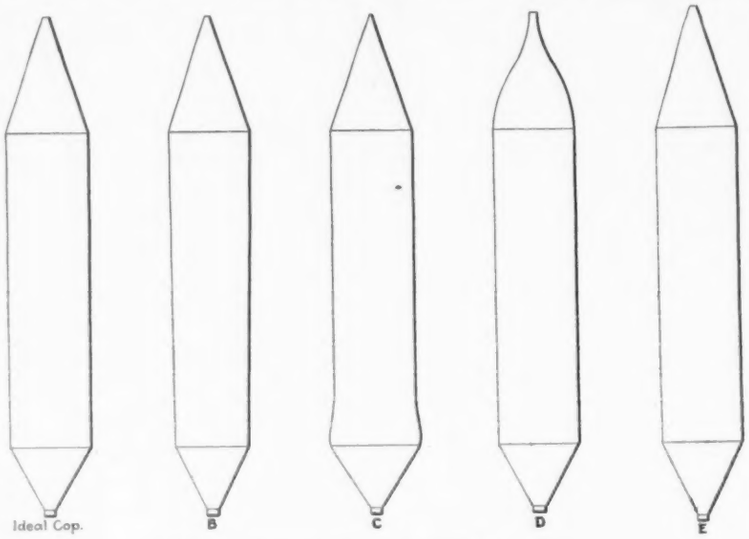


Fig. 5. Drawn to scale from 6-in. cops

It is of vital importance that the shaper gear have the required number of teeth to give the desired diameter to the cop. Unless the cop is to be used for a specified purpose requiring a certain fixed diameter, it should be made as thick as possible, compatible with the gage of the spindles. This will reduce the number of doffings at the mule and increase production, and a greater length of yarn will be available in each cop for the next process. If the chase is lengthened, the diameter of the cop will be reduced; if the chase is shortened the diameter will be increased. It is obvious that the size of the shaper gear must be taken into consideration before altering the shape of the cop.

The amount of twist inserted into the yarn also affects the problem. In the case of soft-twisted yarns the minimum faller weights required to build a stable cop are used; and, because of the soft nature of the yarn and the low winding tension, the yarn package tends to spread out on the spindle. Very often when changing to soft-spun yarn the cop requires alteration, and with this type of yarn it is particularly desirable that the yarn package be as compact as possible, to prevent damage in doffing, transit, etc. This can be done by having a bottom cone that is sound in structure, a chase that is rather short in proportion to the body of the cop, and a cylindrical portion that is the same diameter throughout its entire length.

Speed of Spindles

The speed of spindles during winding and particularly at the end of the inward run of the carriage, if not regulated perfectly, will be responsible for badly shaped cops. This speed is controlled by the quadrant. The correct setting for this (it can be adjusted by the quadrant band) is to have the quadrant perfectly vertical when the locking roller is on the ridge of the copping rail, and the cop is built half way up the spindle. It will then be found that the speed of spindles can be adjusted perfectly by the moving box on the quadrant arm. If the speed of spindles is too high just before unlocking takes place, the counter faller will ride about half an inch below the spindle point, and cause the top cone of the cop to be concave. Very often this will happen when the quadrant is set perfectly, and is due to the quadrant box being too low. Proper adjustment by the spinner will rectify this evil. It is obvious that if the cop chase is distorted, unnecessary strain will have been placed on some parts of the yarn during each draw and this tends to weaken it.

The unlocking bracket must be set so that no strain is placed on the yarn at the end of the inward run. Late unlocking will cause cut yarn, a great evil, but there is no danger of this if the yarn is slack when the carriage reaches the back stops.

On most modern mules the nosing motion is automatic, and the function of this motion is to increase the speed of the spindles at the apex of the cop cone as the cop increases in size. This is to allow for the decreasing diameter of the spindle as the cop builds. This motion can easily be set to give the best results. It may be said, then, that the setting of quadrant and box, the unlocking bracket, and the nosing motion closely affect the shape of the cop and the quality of the yarn produced by controlling the tension of the yarn prior to the finish of winding. The depressing finger is best set so that the counter faller wire is well below the spindle point when the carriage reaches the back stops. This setting varies with the counts spun, coarse counts requiring a lower setting of the wire.

The position of the back scroll band at the beginning of winding determines the speed at which the carriage will be drawn up. The two scrolls on the back shaft are so designed that they will draw up the mule at the required speed, providing they begin to revolve from the correct position, and this position is obtained by manipulating the back scroll band. It can be tightened or slackened. When the mule is on the head, the band eyes in the scrolls should be slightly over top center; and this will give a speed of carriage that will build a firm, even cop, other things being set correctly.

The tension of the backing-off chain should be such that the winding faller travels down as the yarn is uncoiled from the spindles. If the chain is too tight, the winding faller travels down quickly and locks before the yarn coils are unwound from the spindles. This results in several coils being left above the cop chase

each draw, making a raggy nose; and if the chain is too slack snarly yarn is made. There is on most mules an automatic tightening motion worked from the copping rail that ensures a correct tension of chain throughout the entire length of the cop, and this works well and is easy to set.

Forms of Package

The yarn package is usually spun on the mule in two forms, on a paper tube that runs the entire length of cop or on a tube that is of sufficient length to keep the hole in the bottom of the cop intact during doffing, packing, transit, etc. Yarn is often spun on through tubes having perforations, and this facilitates dyeing. The other common method is to spin the yarn on the bare spindle in cop form with a starched bottom.

Yarn on tube is certainly better preserved than with the other method. Also, much less waste is made. When the cop bottom is starched, the mule must run a certain time when beginning a new set of cops, and then must be stopped and binding yarn thrown under the bit on the spindle. This bit is then starched. All the yarn beneath the starch is wasted; and, where starched bottoms are made, the number of draws that are run before starching should be strictly limited so that the minimum waste will be made.

When a mule is producing starched cops and changes over to produce cops on tubes, it will invariably be found that the shape of the cop will require alternation, even if the length and diameter are the same. The bottom cone will require shortening, the back plate resetting, and the chase must be shortened a little. A cop spun on a tube always requires a shorter bottom than one spun on the bare spindle; and, generally speaking, it is advisable to have the copping rail higher on the back plate for this kind of work to prevent "slattered" bottoms. In the case of through tube cops, it is advisable to use a reduced spindle speed.

The writer recently inspected some mules that have been producing for a considerable time yarn on a Northrop bobbin. After conditioning, these bobbins go direct to the loom. It is doubtful if this can be done when spinning fine counts, owing to the high spindle speed.

Faulty Cops

Fig. 5 shows several examples of badly shaped cops, also one cop that is ideal in shape. Example *B* has not sufficient front-plate coning part in action, and the bottom cone is short because of this. The body of the cop is too small in diameter at the bottom for the same reason. To rectify these faults, more conning part must be used, and the back plate set according to the setting previously mentioned. It will be necessary to adjust the locking lever to give the correct height of yarn on the spindle. It must be remembered that, in copping, first-class results cannot be obtained at the first attempt.

Patience and perseverance are necessary, because so many factors are involved. In the case of example *B* the remedy advocated is generally successful, but in some instances a little variation from the alterations mentioned will be necessary. One cannot lay down a hard and fast rule that will be successful in all cases. It is up to the person in charge of the mules to see that the copping mechanism is in first-rate order, and that no worn studs or rollers are being used. Certain standard settings should be made and not deviated from. This applies particularly to the sector, trail-lever roller, and locking-lever roller. If this is done, the number of likely causes of trouble is reduced.

Example *C* has a pronounced ridge at the base of the body. This may be due to the setting of the looking plate. A deep lock will cause an excessive accumulation of yarn at this point. The locking plate can either be moved back or lowered bodily until the correct locking point is attained.

Example *D* shows the type of cop made when the back scroll band is working at the wrong tension. This fault may also be caused by bad winding due to defective quadrant setting, and is sometimes observed when the nosing motion is not working properly.

Example *E* has a bottom cone that is too long, also an excessively long chase. The front plate should be moved to the back of the headstock a little, and the back plate reset. The chase can then be shortened by turning out the adjusting screw in the end of the rail. The yarn must then be set for height on the spindle.

If a mule persists in making a badly shaped cop it does not follow that the setting of the rail or plates is responsible for the defect. Many indirect factors may be responsible, and these must be considered before the copping mechanism is altered.

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Will Spin Cotton to 200s Count

(*Continued from page 35*)

we see a tendency for America to spin finer counts of cotton yarns than have been produced heretofore while demand for more widely used combed counts is trending in the opposite direction, and back toward counts that were the most popular several years ago.

The tendency toward spinning of the finest counts that can be produced in any country of the world is felt to be more of a basic move, while the one in the opposite direction in more average counts is one that may be due to or accelerated by the plentiful supply of short cotton in the 1929 crop and the relative scarcity of staple—inch and longer. This is indicated by the fact spinners are paying almost identical prices for cotton that is used by the combed spinning trade as last fall. In other words the differentials on these staples have widened approximately to the extent the futures market has declined.

This will mean that more manufacturers will be inquiring for shorter-staple yarns and in general for coarser counts than heretofore in their attempt to secure combed yarns at prices in proportion with drop in the cotton market—a basis used by many buyers of goods irrespective of the fact prices of staple cotton may not fluctuate with the futures market. While American spinners may be on the eve of developments which may mean that the finest counts used will be spun in this country, at the same time it is noticeable that the demand for more ordinary counts is trending in the opposite direction.

NEWS about MEN

RAYMOND S. BARTLETT, general manager of the American Woolen Co., Boston, has resigned effective on March 8. WHEATON KITTRIDGE, general counsel has been made first vice-president succeeding the late Frank H. Carpenter. PARRY C. WIGGIN, comptroller becomes second vice-president and WILLIAM B. WARNER, president of the McCall Co., New York, has been elected to the board of directors.

D. P. CAREY, president of the Durham Hosiery Mills, Inc., has been elected president of the Durham Chamber of Commerce.

WILLIAM NAGLE, JR., has been elected a director of the Utica (N. Y.) Knitting Co.

HENRY K. JANSSEN, of the Textile Machine Co., president of the Narrow Fabric Co. and vice-president of the Berkshire Knitting Mills, Reading, Pa., with Mrs. Janssen, has just returned from a lengthy stay in the Bermudas.

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J. E. MCLOUGHLIN, president of the McLoughlin Textile Corp., Utica, N. Y., is on a committee appointed by the Chamber of Commerce in that city to carry on a campaign for new industries.

W. R. ODELL, of Concord, N. C., has been elected president and H. A. LONDON, of Charlotte, vice-president of J. M. Odell Mfg. Co., Bynum, N. C., manufacturers of hosiery yarns.

B. M. CROUSE, president of the Skenandoa Rayon Corp., Utica, N. Y., is passing a several weeks' vacation in Bermuda.

FRANKLIN W. HOBBS, president of the National Association of Wool Manufacturers spoke on "The Fabric Situation" before the 14th annual convention of the New England Clothiers and Furnishers Association, held Feb. 26 at the Statler Hotel, Boston, Mass.

J. CHOICE EVINS, of Spartanburg, was re-elected president of the D. E. Converse Co., Glendale, S. C., at the recent annual meeting, and the board of directors were also re-elected, as follows: W. S. MANNING, C. W. ZIMMERMAN, J. CHOICE EVINS, S. J. DUPRE, and V. M. MONTGOMERY.

HARRY L. KINNE, managing director of the Hosiery Guild, Inc., left March 3 for a short trip to Chattanooga, Tenn., to visit members of the Guild.

C. O. HASSELBARTH, head of C. O. Hasselbarth & Co., Albany, N. Y., delivered an illustrated lecture last week before the Chamber of Commerce in that city on his recent trip to Europe and the Arctic regions.

FRED A. RAKESTRAW, Hyde-Rakestraw Co., Philadelphia, and president of the Cotton Yarn Merchants Association, and Mrs. Rakestraw are spending several weeks in Florida on a winter vacation.

C. M. HEDDLE, managing director of Dominion Woolens & Worsteds, Ltd., has been appointed a member of the Wool Committee of the National Research Council which is planning to give considerable study to the problems of Canada's textile firms.

WALTER H. TRUMBULL and CHARLES SARGENT have been elected directors of the Bigelow-Sanford Carpet Co., succeeding ROBERT WINSOR and F. G. WENSTER, deceased.

Announcement of three additions to the sales staff of the Tubize Artificial Silk Co. of America is made by E. V. PETERS, vice-president of the company. WILLIAM PURSE, who for several years has been in the yarn business in Chattanooga, Tenn., will be in charge of the Chattanooga territory; JOSEPH MORTON, formerly connected with the American Chatillon Corp. will handle the Greensboro, N. C., territory; and C. D. SWARTOUT, formerly assistant to JAMES P. DIGNAN, New York State representative of the company, will be in charge of the New York State territory with headquarters at Gloversville, N. Y. Messrs. Purse and Morton will be assistants to DUDLEY BRIAN who is in charge of the whole southern territory for the Tubize company with offices in Greenville, S. C.

Raymond S. Bartlett, who this week resigned as general manager of the American Woolen Co. He states that after a vacation he hopes to re-enter some branch of the wool industry. Mr. Bartlett was with the big company at its organization in 1899. He had served as head of the worsted division and as selling agent

GEORGE J. SWIFT, former vice-president of Springfield (Tenn.) Woolen Mills, Inc., has been made president of the company.

ROBERT B. BOLE is New York representative of the finishing plants of United Merchants & Manufacturers, Inc., located at Clearwater, S. C., and Fall River, Mass., with headquarters at 320 Broadway.

WALTER J. SINGLE, who for the last three years has been in charge for the Westcott Hosiery Mills of Dalton, Ga., of licensing its "Seamless Shaped Foot" to hosiery mills throughout the U. S. A. and Canada, has been appointed executive assistant sales manager with full direction of salesmen, territories, and accounts for both the Fabrimode and Mode-Modeled Divisions.

ASHTON M. TENNEY, vice-president of the American Bemberg Corp., is spending part of his winter vacation in Florida.

HERBERT T. MASON, formerly associated with Artcraft Silk Hosiery Mills, Philadelphia, in their selling department, is now connected with Sheertex Hosiery Co., Inc., Woodbury, N. J., as sales manager, selling to jobbers and to retail trade.

R. V. VINCENT is in charge of production control department of Bear Brand Hosiery Co., Kankakee, Ill.

WALTER E. BELLOWS, secretary of Rice, Barton & Fales, Inc., Worcester, Mass., and Mrs. Bellows, have returned from a month's cruise to the West Indies and the northern coast of South America.

W. C. COVINGTON, secretary and treasurer of the Harris-Covington Hosiery Mills, Inc., of High Point, N. C., was elected a director in the Sedgefield Country Club, at the recent annual meeting.

PAUL H. WILSON, secretary of the Graton & Knight Co., Worcester, Mass., spoke on the proposed simplified calendar before the Rotary Club of Ware, Mass., on March 3.

B. H. BRISTOW DRAPER, JR., son of the president of the Draper Corp., Hopedale, Mass., left on March 1, for a vacation in Havana, Cuba, and Miami, Fla., after which he will go to Greenville, S. C., where he will be employed in a cotton mill for a period of training.

E. H. PATTON, for many years treasurer of the Mohawk Carpet Mills, Amsterdam, N. Y., was elected a director of the Antlers Country Club at the annual organization meeting in that city.

VICTOR T. ANDERSON, treasurer of the Connecticut Mills Co., Danielson, Conn., has left for Decatur, Ala., where the southern branch of the company is located.

H. S. WOOD has resigned as agent of the Thorndike Co., West Warren, Mass.

H. C. SKELTON, formerly with the Union-Buffalo Mill, Union, S. C., is now cost accountant and efficiency expert at the St. Paul's (N. C.) Cotton Mill Co.

FRANCIS G. LAFOREST has resigned as paymaster for the Thorndike Co., West Warren, Mass., to accept a similar position with the Otis Co., Ware, Mass.

A. F. MacIntyre, for a number of years superintendent of the Appleton Co., Anderson, S. C., has been elected treasurer and general manager of the Fitzgerald (Ga.) Cotton Mills. The officers of these mills are: F. W. Jefferson, president; B. H. Beall, secretary.

Julian Butler has resigned as superintendent of the St. Paul's (N. C.) Cotton Mills, and he is succeeded by A. I. McDonald, who, previous to Mr. Butler's connection with the local mills, was superintendent for 17 years.

W. R. MacIntyre, for the last three years superintendent at the mill of the Eddystone (Pa.) Mfg. Co., has become vice-president and superintendent at the mill of the Joseph Bancroft & Sons Co., Wilmington, Del., parent organization. He will be succeeded by Evan Harlow, heretofore superintendent of the Jones Division of the Arnold Print Works.

Charles Walker, former superintendent of Trion (Ga.) Mfg. Co., has been appointed assistant superintendent of the Southern Mfg. Co., Athens, Ga.

Frank J. Reiser, for 22 years superintendent of the Minterburn Mill of the Hockanum Mills Co., Rockville, Conn., resigned recently and was succeeded Feb. 28 by Fred H. Lippmann, formerly assistant superintendent. Mr. Reiser had been employed by the Hockanum company for 48 years, starting at the age of 12 years.

J. F. Chalmers, for the last three years superintendent of the Fort Mill (S. C.) Mfg. Co. Mill No. 2, has resigned to accept a position at Greenwood, S. C.

H. D. Leonard, mechanical superintendent of the Pacific Mills, Lyman, S. C., has resigned.

George A. Urlaub, formerly connected with the Tubize Artificial Silk Co., New York, is now general superintendent of Lebanon Mill Co., Pawtucket, R. I.

W. R. McElveen is now superintendent of Southern Mfg. Co., Athens, Ga.

H. W. Swan, formerly superintendent of Winthrop Cotton Yarn Co., Taunton, Mass., is now night superintendent of Goodyear-Clearwater Mill No. 2, Rockmart, Ga.

Dan Johnson has been promoted to assistant superintendent at Ingram Mfg. Co., Nashville, Tenn.; A. M. Gordy is overseer of carding; L. M. Saxon, second hand and W. O. Reed, overseer of spinning.

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George Belanger, overseer of carding for the Dedham (Mass.) Mills, for a number of years has resigned his position with that company.

T. O. Babb is now overseer of carding at the Balfour (N. C.) Mills, Inc.

Sam Britt is now overseer of carding and spinning at the Plant No. 3 of the St. Paul's (N. C.) Cotton Mills Co.

Alfred Barnes has been appointed overseer of carding at the Alabama Cotton Mills, Aliceville, Ala.

George W. Bliss, formerly with Horner Bros. Woolen Mills, Eaton Rapids, Mich., has taken charge of finishing for the Malden (Mass.) Spinning & Dyeing Co.

Conrad Ducharme, formerly section hand at the Lawton Mills, is now with the Warwick (R. I.) Mills, experimenting on counts.

J. T. Durham, overseer of the cloth room of the Chadwick-Hoskins Mill, Plant No. 3, Charlotte, N. C., has resigned.

W. M. O'Daniel is now overseer of the carding department of the Watts Mills, Laurens, S. C.

A. R. Ferguson, formerly of Monroe, N. C., is second hand in weaving at the Entwistle Mills, No. 1, Rockingham, N. C.

J. W. Garrett, overseer of carding at the Catherine Mills, Sylacauga, Ala., has been transferred to a similar position with the Sycamore (Ala.) Cotton Mills.

TEXTILE CALENDAR

Textile Operating Executives of Georgia, Spring Meeting, Georgia School of Technology, Atlanta, Ga., March 11, 1930.

●

Committee D-13, American Society for Testing Materials, Spring Meeting, Charlotte, N. C., March 13-14, 1930.

●

Southern New England Textile Club, New England meeting, Providence-Biltmore Hotel, Providence, R. I., March 15, 1930.

●

Southern Textile Association, Carders' Division, spring meeting, Clemson College, S. C., March 21, 1930.

●

Cotton Manufacturers Association of Georgia, Annual Meeting, Atlanta-Biltmore Hotel, Atlanta, Ga., April 3-4, 1930.

●

Southern Textile Association, Master Mechanics' Division, Spring Meeting, Charlotte, N. C., April 24, 1930.

●

International Exposition, Textile Exhibitors Association, Mechanics Building, Boston, Mass., April 28-May 3, 1930.

●

National Association of Cotton Manufacturers, Annual Meeting, Copley-Plaza Hotel, Boston, Mass., April 30-May 1, 1930.

●

American Cotton Manufacturers Association, Thirty-fourth Annual Convention, Carolina Hotel, Pinehurst, N. C., May 12-14, 1930.

●

Knitting Arts Exhibition, Commercial Museum, Philadelphia, May 12-16, 1930.

●

National Association of Hosiery and Underwear Manufacturers, Annual Meeting, Philadelphia, May 14, 1930.

●

Philadelphia Textile School Alumni Association, Outing and Annual Dinner, Philadelphia, June 6, 1930.

●

National Knitted Outerwear Association, Annual Meeting, Toronto, Canada, June, 1930. (Exact date not yet set.)

●

Southern Textile Association, Annual Meeting, Ocean Forest Hotel, Myrtle Beach, S. C., June 27-28, 1930.

●

Ninth Southern Textile Exposition, Textile Hall, Greenville, S. C., Oct. 20-25, 1930.

●

Southern Textile Association, Semi-Annual Meeting, Poinsett Hotel, Greenville, S. C., Oct. 23, 1930.

O. L. Johnson, head of the dyeing department of the Lavonia (Ga.) Mfg. Co., has resigned, and has opened a cleaning establishment at Hartwell, Ga.

John J. Joyce, formerly overseer of carding for the Daniels Mfg. Co., E. Brookfield, Mass., has resigned his position with that company.

John Logan has resigned his position as head dyer with Dominion Woolens & Worsteds, Peterboro, (Ont.) Can. Robert Yeaman has been appointed to that position.

N. A. Long, an alumnus of the Textile School of North Carolina State College, has been made head of the dyeing department for the Beacon Mfg. Co., Swannanoa, N. C. Mr. Long was formerly with the Du Pont company at Charlotte.

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Samuel McKenzie is overseer of carding at Fairview Mills, Valatie, N. Y.

J. T. Ownsby, overseer of carding at the Chadwick-Hoskins Mill, Plant No. 3, Charlotte, N. C., has resigned.

A. H. Phillips, formerly second hand in carding at the Bibb Mfg. Co., Plant No. 3, Macon, Ga., now holds a similar position with the Thomaston (Ga.) Mills.

H. T. Pickens, overseer of spinning and winding at the Ingram Mfg. Co., Nashville, Tenn., has resigned.

C. L. Still, superintendent of Plant No. 1, Fort Mill (S. C.) Mfg. Co., has been elected a member of the board of health of Fort Mill to serve for a 5-year term.

Gridley Buddy, who graduated from the Worcester (Mass.) Polytechnic Institute in 1926, is now overseer of dyeing and finishing of the Kerr Bleaching & Finishing Works, Concord, N. H.

Frank Bence, formerly overseer of weaving at the Rochdale (Mass.) Mills of the American Woolen Co., has accepted a similar position with the Salisbury Mills at Manchaug, Mass. He assumed his new duties on Jan. 20.

G. F. Becknell, overseer of weaving at the Ellenboro (N. C.) Mfg. Co., has resigned.

L. A. Cottrell has been appointed overseer of weaving at the Peerless Mills, Thomaston, Ga.

Albert Edmonson has concluded his duties as overseer of carding and combing at the plant of the Gilbertville (Mass.) Mfg. Co. to assume a similar position with the Hudson (Mass.) Worsted Co.

Arthur D. Healy, master mechanic of the Stevens Linen Works, Webster, Mass., has returned from a visit to the plant of the Ford Motor Co., Detroit.

George Hodges has returned to his former place as overseer of dyeing at Perkins Hosiery Mills, Columbus, Ga., after having been associated with Meritas Mills.

H. E. Harden, formerly overseer of night spinning at the Shelbyville (Tenn.) Mills, has accepted the position of head of the twisting and winding departments of the Atlantic Cotton Mills, Macon, Ga.

G. B. Hamby now holds the position of head of the weaving department of the Aponaug Mfg. Co., Kosciusko, Miss.

NEWS about MILLS

Cotton

Grosvenor-Dale Co., North Grosvenor Dale, Conn., resumed operations of its two plants on Feb. 25 on full schedule. Night work was also resumed in full force.

Exposition Cotton Mills, Atlanta, Ga., have reduced their operating schedule to four days a week, 40 hours day operation, and are doing some night work.

Fulton Bag & Cotton Mills, Atlanta, Ga., are running 55 hours per week.

Oconee Mfg. Co., Whitehall, Ga., is the new name of **Georgia Mfg. Co.,** manufacturing diaper cloths. Edward Dunbar is treasurer and manager and E. N. Tart superintendent.

White Hall (Ga.) Yarn Mills has been changed to **White Hall Mfg. Co.** R. P. White is president and treasurer and E. J. Boswell superintendent.

Pepperell Mfg. Co., Biddeford, Me., has placed an order with Gaston County Dyeing Machine Co., of Charlotte, N. C., for additional equipment for the dye house.

Lancaster Mills, Clinton, Mass., have sold their Cameron St. mill, a five-story brick building, to an organization which is to engage in the manufacture of rubberized cloth.

Otis Co., Ware, Mass., is to take over the ticking business of the Thorndike Co., West Warren, Mass. Bliss, Fabyan & Co., New York and Boston, selling agents for both companies, will continue to sell the products. With the transfer of this business the directors of the Thorndike Co., may decide to close the plant unless a new product is introduced to replace the ticking.

Nashua Mfg. Co. is running on a schedule of four days and four nights a week at its mill at Lowell, Mass., giving employment to about 700 persons.

***Sapphire Cotton Mills,** of Brevard, N. C., which includes the mill buildings, equipped with 6,300 spindles for the manufacture of combed yarns, 31 operatives' houses, and a water power site of 2,863 acres, which were recently placed in the hands of a receiver, H. E. Erwin will be offered by him at public auction March 22.

Holt, Gant & Holt Cotton Mfg. Co., Elon College, N. C., who operates the Altamahaw Cotton Mills, manufacturers of denims, at a recent meeting of the stockholders decided to liquidate. The plant, which is equipped with 6,500 spindles and 285 looms will be offered for sale in the near future.

John Farnum Co., Lancaster, Pa., manufacturing the Conestoga brand of cotton goods, tickings and awnings, will be taken over by local business men who plan to continue operation. The group interested in the purchase now hold an option on the plant. Normally the company employs between 500 and 600 workers.

Washington Lace Co., Coventry, R. I., has started construction of a mill building which will have a six-loom capacity and extra space will be provided for future expansion.

National Rug Mills, Inc., Milwaukee, Wis., have been formed under State laws to take over and operate the **National Rug & Hammock Mills,** with local plant at 1001 Clybourne St. The new company is headed by H. J. Knoernschild and Clifford E. McDonald.

Wool

Atlanta (Ga.) Woolen Mills have purchased from David Gessner Co., Worcester, Mass., a new double bed rotary press for calendering purposes.

Mayfield (Ky.) Woolen Mills, which have been acquired by the Curlee Clothing Co., of St. Louis, are installing additional machinery, in order to handle the increase in woolens being produced at the mills.

Camden (Me.) Woolen Co., according to Agent W. H. Broadhead, has resumed the single-loom system after a tryout of the two-loom method which was very unsatisfactory to the weavers. The plant is now running in all departments, with regular working force, following brief curtailment.

Mann & Stevens Woolen Co., East Brookfield, Mass., resumed operation on March 3, after a shut-down of two months.

Daniels Mfg. Co., East Brookfield, Mass., which had been closed for three months, resumed work on samples March 3.

***Jefferson (Mass.) Mfg. Co.,** has passed from the ownership of the estate of Mrs. Augusta F. Jefferson, widow of M. V. B. Jefferson, founder of the company, to Russell H. Coe, president and treasurer of the company, and his brother, Francis L. Coe, a director and purchasing agent for the company. Mrs. Jefferson, who is 88 years old, is under conservatorship.

Mayo Woolen Mills Co., Millbury, Mass., has sold its two-story business block at West Main and Burbank Sts., a large storehouse in the rear and a double tenement house in that town to W. E. Horne & Sons, general store, who occupy the ground floor and basement of the block.

Huntington (Mass.) Mills, Inc., a community company owning the woolen mills formerly controlled by the Dunn interests, has leased the property to the **Green River Woolen Mills, Inc.,** New York, of which Herbert Pemberton is agent. The latter company was organized to operate the plant and preliminary work is already under way. Yarns are being shipped and actual operations will start during the week, it is expected.

Andrew Howarth & Son, Inc., has been incorporated with a capital stock of $250,000 to operate the **Oxford (Mass.) Woolen Mills,** succeeding a partnership composed of Francis A. and Andrew P. Howarth. The officers and directors are: President and treasurer, Andrew P. Howarth, Percy V. Stroud and Bertha A. Howarth, wife of Francis A. Howarth.

United States Worsted Corp., Boston, Mass., Loring Young receiver, has filed a report in the Superior Court listing liabilities as $3,501,323.63 and assets as $1,157,579.29. It is advised that operation of any branch of the business is not feasible and immediate sale is recommended. Properties are located at North Chelmsford, South Lawrence, Lowell and real estate in Newton.

***Firth Carpet Co.,** Auburn, N. Y., has work nearing completion on three new mill units, in course of erection for a number of weeks past, and expects to have the structures ready for equipment installation within two to three weeks. The expansion will be used primarily for increase in capacity in the axminster and chenille fabric divisions. John W. Turner Co., Amsterdam, N. Y., is general contractor.

All-Wool Blanket Corp., Charlotte, N. C., with an authorized capital stock of 1,000 shares, has been issued a charter by the Secretary of State to manufacture and otherwise deal in blankets, woolen clothing, etc. The incorporators are James H. Taylor, T. H. Hoover and D. Choate, all of Charlotte.

Archibald Holmes & Sons, Philadelphia, Pa., manufacturers of wilton carpets and rugs, are having plans drawn for a building to be located at southeast corner K St. and Erie Ave., and according to W. Ward Easby, engineer, the proposed development will be of steel, brick and concrete construction, three stories and one story, with a wing 50 x 70 ft. The main building will be 96 x 305 ft. Contract will be placed within the next few days, bids being due about March 1.

Woolrich (Pa.) Woolen Mills is the new name of **John Rich & Bros.,** incorporated Jan. 1930, after operating as a co-partnership for 100 years. M. B. Rich is president and R. F. Rich treasurer and general manager. There will be no change in management of the company.

Millbrook Woolen Corp., North Kingstown, R. I., recently formed with

*Indicates previous mention of project.

a capital of 625 shares of stock, no par value, to operate a local mill, will be represented by Charles V. James, 90 Broad St., Norwich, Conn., one of the incorporators. Other incorporators are John F. Gallagher and Henry Harris, Norwich.

Knit

Chalmers Knitting Co., Amsterdam, N. Y., is operating on full time weekly schedules with an enlarged force.

Warner Knitting Co., Inc., Clayton, N. Y., manufacturing cotton bathing suits and sweaters, has completed a 42 x 40 ft. addition to mill which will increase production about 50%. The lower floor will be used by the cloth conditioning department and packing and shipping departments, while the knitting, winding and cutting room has been placed on the second floor.

Fuld & Hatch Knitting Co., Cohoes, N. Y., is now operating its yarn mill on day and night schedules because of increased demand.

Utica Knitting Co., Richfield Springs, N. Y., has rebuilt the plant and installed new machinery for manufacturing lightweight underwear. The number of employes has been increased about 30%. The Utica plant will not take on additional help until later when production of heavy-weight underwear will begin.

Bossong Hosiery Mills, Inc., Asheboro, N. C., makers of full-fashioned hosiery, which have been in operation for about a year, will soon award contract for addition 60 x 140 ft. The plant now operates 18 machines, 42 gauge.

***Asheville (N. C.) Hosiery Co.,** which was recently acquired by Theodore Y. Rodgers, of Philadelphia, and D. R. Baer, treasurer, from Albert E. Schulz and J. B. Rauch, president and vice-president, respectively, is planning an expansion program that calls for double the present amount of machinery. The mill is now producing 1,000 dozen pairs of full-fashioned silk hosiery weekly. The machines are for delivery during the next six months. John Laux is the new superintendent of the plant.

Shoaf-Sink Hosiery Mills, Lexington, N. C. are installing 50 additional knitting machines of the 340-needle type to produce a finer grade of silk hosiery than now manufactured. This brings the plant up to 240 machines.

Mount Airy (N. C.) Knitting Co., manufacturer of children's underwear and bathing suits, has leased the main floor of a building near its plant where 45 new sewing machines and 28 new knitting machines will be installed. This will practically double the capacity of the plant.

***Wendell (N. C.) Hosiery Mill Co.,** plans rebuilding of portion of mill recently damaged by fire, with loss reported at close to $25,000.

Caroledo Hosiery Co., Doylestown, Pa., capital $50,000, has been incorporated for the manufacture of women's full-fashioned hosiery, 48 gauge, with 6 full-fashioned machines, 4 loopers and 4 sewing machines. John J. Doyle is president and J. L. Campbell treasurer.

Cadet Hosiery Co., Inc., Philadelphia, Pa., mill has been closed temporarily. They are moving 39-gauge machines to their plant in the South. There have been reports that all of the local machinery would be moved to their plant at Columbia, Tenn., but this report has not been confirmed by the firm.

J. W. Landenberger & Co., Philadelphia, Pa., manufacturers of hosiery, also operating as the **Randolph Mills,** have purchased a plot of ground, N St., 63 ft., north of Kensington Ave., 100 ft., on N St., with a depth of 492 ft., to M St., containing 57,500 sq.ft. which was held for sale at $40,000. Purchasers will immediately begin construction of a new brick and limestone plant, containing approximately 60,000 sq.ft. Plans for it have been prepared by Julian S. Simsohn, Inc., engineers.

Anthony Kobb, Inc., Philadelphia, Pa., is the name of a newly chartered concern to manufacture and sell women's full-fashioned hosiery. Application was made by Anthony Kobb, treasurer, 1131 Brill St., and others.

Gem Hosiery Co., Inc., Philadelphia. This concern, which has been in receivership, has been purchased by new interests and the manufacture of hosiery has been resumed. Plant has been purchased by John C. Meyer & Son, 129 N. 12th St., and they will operate the mill under a partnership consisting of John C., and Arthur J. Meyer and Roger A. McShea. They have an equipment of more than 130 knitting machines.

Philadelphia (Pa.) Knitting Mills Co., has conveyed its three-story mill, on site, 100x200 ft., at Sixteenth Street and Indiana Avenue, to the Corn Exchange National Bank, for an amount of $70,000.

Hartford Knitting Mills, Nashville, Tenn., were damaged by fire affecting machinery and stocks, March 4. The Jackson Shirt Factory at the State Prison, Nashville, was also damaged. Damage to both plants was estimated at $18,000.

Springstead Knitting Co., which has announced its intention of moving from Simcoe, Ont., to Galt., has purchased the Grand River Motor Bldg., on Water St. N., for its location.

Silk

Southern Silk Mills, Inc., Greensboro, N. C., have amended their charter to enable transfer of their principal office from Greensboro to Kernersville, N. C., where they recently established another plant. Officers are: J. G. Bentley, president; C. E. Hudson, vice-president; Kenneth Bentley, treasurer, who along with W. M. Ridenhour, L. H. Hole, B. B. Vinson, Bynum Merritt and Frank P. Hobgood, jr., compose the directorate.

The Angle Silk Mills, Inc., Rocky Mount, Va., is erecting on the mill grounds five brick-cased bungalows for mill employes. These houses will be modern in every detail. It is expected when the buildings are completed others will be built.

***Empire State Silk Label Co.,** West New Brighton, S. I., has steel superstructure nearing completion for a two-story and basement addition, and is awarding subcontracts for completion of unit, which is scheduled to be ready for service at early date. George J. Guteknust, 73 New St., Port Richmond, S. I., is architect.

Rayon

***Skenandoa Rayon Corp.,** Utica, N. Y., plans to increase its yarn output to 68,000 lb. when the expansion program is completed next month. The spinning room has been enlarged by adding 22 machines along with the extensive construction project nearing completion.

Viscose Co., Lewistown, Pa., will erect a one-story addition on a site 267x397 ft., from plans drawn by Ballinger Co., architects, Philadelphia.

Industrial Rayon Corp., Covington, Va., has awarded contract to D. J. Phillips, Roanoke, Va., contractor, for the erection of the first unit of several dormitories that the corporation will have built in South Covington, it was announced by L. A. Wolin, assistant to the president. Work will begin on this first unit within the next few days, and the contract calls for completion within 90 days.

Finishing

Joseph Bancroft & Sons Co., Wilmington, Del., is operating its recently established waterproofing division on a capacity schedule with full working force.

Fabrics Finishing Corp., Paterson, N. J., is running its different mills on normal production schedule, with business exceeding that of a year ago both for January and February. It is expected to hold to present output for an indefinite period.

Philadelphia (Pa.) Silk Dye Works. Frank E. Slack, secretary, Cotton Yarn Merchants Association, to whom this concern assigned its assets, states that liabilities of the firm, hosiery dyers, will amount to $18,500 and the assets to $56,600. It is probable that assets of company will be sold and the business liquidated.

Universal Dye Works, Philadelphia, Pa., dyers of hosiery, have awarded contract for an addition to their plant at Womrath & Tackawanna Sts., Frankford, which will cost $10,000.

Miscellaneous

W. V. Flynn Co., Inc., Northboro, Mass., has been incorporated with a capital stock of 2,000 shares of common without par value, to operate a shoddy business in the former Robert Whittaker Co. mill. The business was started last year. The officers and directors are: President and treasurer, William V. Flynn, Marlboro, Mass.; Agnes M. Krouse and Marion L. Flynn.

Miles Linen Co., Inc., Salem, Ore., manufacturing linen thread and twine, has sold the entire outstanding block of treasury stock to Barbour Bros., of New York, for $50,000. It is expected that the mill will soon double its capacity.

*Indicates previous mention of project.

Questions and Answers

We undertake to answer, free of charge, to the best of our ability, questions pertaining to textile matters received from any regular subscriber to TEXTILE WORLD.

Inquiries should give the fullest information and data possible. In the case of damage to material, a sample should be sent. We do not undertake routine analysis of woven or knitted fabric construction, or investigation involving unusual expense.

All inquiries must be accompanied by the name of the person inquiring, not for publication, but as evidence of good faith. The identity of those seeking information on technical subjects will not be disclosed.

Letters expressing opinions or voicing criticism will be signed by the correspondent's name unless the letter itself contains a request that the name be withheld.—EDITOR.

Stains on Khaki Drill

Technical Editor:

We are enclosing sample of a khaki drill on which you will see several spots. We have several thousand yards in a condition similar to this. The sample represents the worst that we have. The spots that run through the goods are similar to the smaller ones on the sample. This cloth before dyeing was diastafored and boiled out. We shall appreciate any suggestion that you can give us as to what is causing these spots. (7096)

We have examined the sample of khaki drill which has a number of dark colored spots scattered over the goods. There is no regularity in these spots in size or shape except that they all are nearly round. The spots are scattered so irregularly over the face of the goods that it is hard to say that one machine or part of any machine caused them. The spots are all on the face of the goods and do not penetrate through to the back of the cloth. This would indicate that the spot is not grease or oil. To prove this fact we extracted a sample three hours with ether, and it had no effect on the goods or the spot.

We then spotted the sample with water and placed it on a miniature copper dry can to dry out the water. We found that this waterdrop left a spot very much like the spots noticed by the inquirer. While the piece of cloth was on the copper dry can, we dropped more water on the goods. Where the goods were hot, the spot made went through the goods and left an impression on both sides of the fabric. Where the goods were cold and the drop was small, the water did not strike through to the reverse side. We are sending you a set of these samples which have been spotted with just plain water. While they are smaller than the sample spots submitted, they look the same. The spot made by dropping water on the cool fabric is shown in the accompanying illustration.

From these tests, we have drawn several conclusions. We believe these spots to be nothing more than water spots. We believe that water has dripped onto the goods as they were being rolled from one roll to another, after they were sized and finished. We believe, because the spot does not strike through to the back, that the goods were cold when this water dripped on them.

Possibly melted ice or snow from a leaky roof has dripped on the goods while they were being measured or inspected. There may be uncovered pipes overhead, where moisture is condensing and then dripping onto the fabric. This may happen anywhere the goods are being processed. These are of course only conjectures, and we would have to go through the mill to find the particular place where something is dripping onto the goods. After eliminating all possible places where this dripping of water could happen, we would cover the pipes with insulating material to prevent any further dripping of water.

The removal of these spots is very easily done. A sample we are returning to the inquirer was treated by simply wetting it out in warm water. The water was 150° F., and the goods were worked in this water for five minutes. They were then run through a wringer and nearly dried on a small copper can. The final drying was done with a hot flatiron. This treatment has taken some of the size out of the goods, so that it will be necessary to refinish them. You state that there are several thousand yards of goods in this condition. You could duplicate results obtained in the laboratory by giving the goods two ends through a jig with hot water, changing the water between the runs. After removing the goods from the jig and refinishing them as they had been finished before, the fabrics should be in a salable condition.

◆

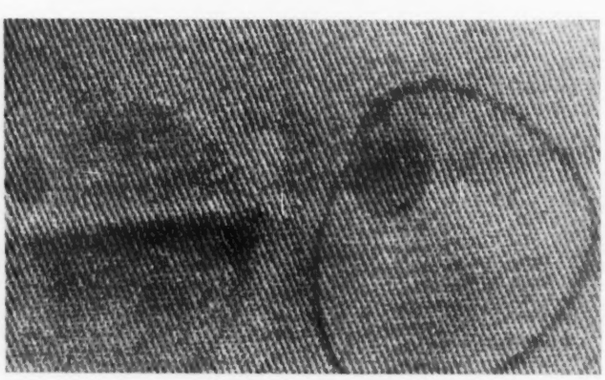
Causes of Slack Twist on Ring Twisters

Technical Editor:

I am writing to know if you have anything about stopping slack twist on ring twisters. I am having a lot of trouble with slack twist. (7105)

We suggest a general and thorough inspection of all bands on frames and the removal of all that are slack. Check up to see that all frames have the same and proper twist gear. Look for a frame that may have a different constant, which might give a different twist, even with the same twist gear. Possibly the spindles need oil, and are therefore not running up to speed; this would cause soft twist. You may be using bands of different sizes; a larger band will not give the same amount of twist that a smaller band would give. Accumulation of lint between the top of the bolster base and the inside of the whorl will often retard the speed of the spindle.

Look after the quality and the uniformity of size of



Water Stain on Khaki Drill

the spindle bands to make sure that each band weighs practically the same number of grains, or that there are the same number of bands per pound. If you are making your own bands, you can easily maintain your own standard of weight and strength of band. First see that the roving or yarn from which the bands are made has the proper amount of twist. Of course, if the bands are made from roving, there should be much more twist in the material than is required in roving for spinning purposes. If, for instance, you are making, say, a 3.00-hank roving with 5.00 twists per inch and are using ten strands to a band, a strand of eight should be taken to the testing machine and tested for breaking strength. Then if the bands are kept weighing uniformly and are tied on with uniform tension, and if the spindle ratio to the cylinder is correct, there ought not to be much slack yarn. Bear in mind, however, that if the bands are made from thread or yarn, they will often stay on much too long and will make a lot of slack yarn before they will automatically break off. To eliminate this, the slack ones should be found and cut off.

◆

Sleazy Marks in Full-Fashioned Silk Hosiery

Technical Editor:

We are forwarding to you a sample of full-fashioned hosiery, showing peculiar sleazy marks which we sometimes encounter in our finished product. Could you give us any possible information on the cause and remedy for this defect? Apparently it does not show up in the gray goods; but after the bagged work has come out of the dyebath, it shows in the silk portion of the stocking.
(7080)

The trouble shown by the sample is purely a case of bad sleaziness. The trouble is caused by uneven knitting or a group of distorted stitches occurring in this particular stocking at frequent intervals.

The usual alibi for this condition among all knitters is "dry silk." However, dry silk is only one case among many others for producing distorted groups of stitches or sleazy knitting. Nevertheless, in the sample submitted we believe the chief cause of the trouble lies in dry silk or rather in silk that is not uniformly wetted or conditioned. This is borne out by the fact that a careful examination of the distorted stitches shows that the distorted groups are much shorter than the regular knitted stitches where the fabric is smooth.

The distorted stitches also show twisted or irregular formation, indicating that the silk was dry and harsh at such points. The uniform stepping down in door-step fashion of these distorted places is produced by one side or point of the cone becoming unduly dry. This could come from one side of cone being exposed to direct rays of the sun, to a steam pipe, or to some other kind of artificial heat, which would cause an irregular drying. Such a condition causes the silk to have an uneven tension when being fed into the machine and oftentimes produces a slight hanging or jerking tendency. This will be reflected in the fabric in the shape of short distorted stitches.

General construction of the sample indicates that the knocking-over bits are a little low. We would advise carefully checking this item and raising the knocking-over bits if room for adjustment is found. We believe that this suggestion, along with well moistened and conditioned silk, will practically eliminate the trouble.

You state that the trouble does not show up in gray goods. We agree that the trouble may not show up conspicuously in the gray goods, but we suggest that if you will make a careful inspection you will find the imperfections in the gray state. Dyeing and finishing only serve to magnify an already imperfect condition in the goods.

THOUSANDS of inquiries are handled annually by the Technical Editors. In order that as many readers as possible may benefit from this service, we select problems of general interest for publication each week.

◆

Warp Stop Motions

Technical Editor:

Our looms are running on a range of plain and fancy serges from 12 to 24 oz. and are equipped some with electric and some with mechanical warp-stop motions. The latter are a recent installation on new looms.

The electric stop motions are giving us better results than the mechanical, particularly on the heavier fabrics, where there is a distortion of the bars as the lay beats up. It is not uncommon for me to find a stop motion, particularly on a six-room job, that does not function at all on a third of the length of one or two bars nearest the dead side.

We have sufficient parts here to replace our mechanical with electric stop motions, but it goes against the grain to strip off new equipment when our trouble may only be lack of experience and not the fault of the stop motion.

Can you give me the benefit of any experience on this?
(7077)

From the meager information you have given, it is rather difficult to judge your trouble. Many mills are using both the mechanical and electric stop motions and are having no trouble with either.

It seems to us that your sley is too heavy for the amount of banks used; that is, the threads are too crowded to drop quickly enough to stop the loom. If you would use four banks where you are using two, and six banks where you are using four, we think you would overcome your trouble. After all, if the threads cannot drop, no stop motion will operate successfully.

◆

Layout for Weave-Room Addition

Technical Editor:

Will you be kind enough to give us your opinion on the following layout. We wish to add a weaving unit of 50 looms for 36-in. novelty cotton cloth. We propose to

buy the yarn. We wish the most efficient and balanced layout of necessary machinery step by step from the time we receive the yarn until it comes off the looms. No finishing equipment need be considered. We shall dress warps of about 1000 to 1400 yd. of a pattern.

(7083)

This question is very incomplete. You state that a 50-loom unit is being added, but do not state what kind of looms are to be employed. There is a wide difference between a dobby and a jacquard loom. If the looms are jacquards, the warps will have to be drawn at the loom. If they are dobbies, the warps will have to be drawn on frames and will require harness shafts and heddles. This will mean the purchase of drawing-in frames and the employment of skilled drawing-in girls. No drawing-in frames are required for jacquard looms and less skill is required to draw in the yarn on a jacquard at the loom.

There is the question of changing the patterns. If the patterns have to be changed on a jacquard, all that is necessary is to have new cards cut for each change, unless the tie-up of the machine is changed. If the patterns have to be changed on a dobby loom, the warp will have to be redrawn. This requires the services of a loomfixer to take the old harness out of the loom and, when the warp is redrawn, to replace the new drawn harness and warp in the loom.

To answer this question intelligently it would also be necessary to know how the warp yarn will be delivered —whether on spools, section beams, or on loom beams fully sized. The kind of warp used would have to be considered, and also the average picks per inch in order to figure out the average life of a warp. The manner in which the filling will be delivered must be known in order to figure out the necessary equipment for the handling. We hesitate to give any opinion on a layout as described above unless more data is given.

◆

Gum and Lint in Slots of Latch Needles

Technical Editor:

We are enclosing a sample of 70-gage needle. You will note that the latch of this needle does not close against the hook due to a foreign substance such as lint being in the depression where the rivet goes through. We have tried numerous ways of keeping these latches free but have been unsuccessful up to the present time. This condition causes us to have a tremendous amount of seconds due to the streaks in the fabric; and if there is any way that you could advise us as to how to overcome this difficulty, we would appreciate it very much.

(7063)

You do not state what kind of yarn you are knitting; but, judging from the gum and lint in the slots of the needles, we believe it is gummed silk. This however, is not necessarily so, as the same trouble sometimes develops from rayon, especially when the wrong kind of oil is employed in coning the rayon. Some of this trouble is to be expected from yarns of all kinds, but a higher degree of the trouble will be found in knitting pure gum silk.

The best method of keeping slots from clogging with gum and lint is to keep the needles well lubricated in the slots and around the latch rivet. We recommend a high-grade light machine oil for the purpose, and would see that the heads of needles are well oiled at least once a day. There is a pretty general idea abroad in the knitting trade that oiling the needles in the cylinder is to be rather religiously avoided in knitting either high-grade rayon or pure-silk hosiery. We believe, however, that the needles can be sensibly and satisfactorily oiled every day, and trouble from oil streaks in goods held to a very satisfactory minimum.

The samples clearly indicate that you are not properly lubricating your machine, as the needles submitted show hard, dry oil or grease caked all over the body and butt of the needle. The needles also show evidence of much wear, indicating that they have been in service a long time. We experimented with one needle by dropping a drop of oil in the slot and working the latch a few strokes, and it responded perfectly to the treatment. The other needle would not satisfactorily respond to the treatment, and it was necessary to use a thin brass gage to remove the obstruction from the slot.

Further examination of the latter needle showed that the cheek of the needle was buckled slightly, and might have been in this condition when put in the machine; or the trouble may have come from a smash-up on the machine while in operation, or from other causes of rough handling. We also note, by the aid of a magnifying glass, that the slots in the two needles submitted are rough and irregular. This condition will have a tendency to cause particles of lint and dirt to accumulate more rapidly in the slot.

As a suggestion for correcting the trouble we would advise stripping all the needles from the machine and washing them in gasoline or some similar cleaning liquid. After they are cleaned they should then be oiled with a light needle oil and closely and individually inspected. Needles showing stiff latches should have the latch agitated until it works freely; and, if necessary, the gum should be gouged out with a gouge specially made for the purpose. We believe that if these suggestions are carried out, the machines followed up closely thereafter, and the needles with stiff latches removed or corrected as fast as they develop, the trouble will be reduced to a very satisfactory minimum.

◆

Cotton Fabric Has Undesirable Crepe Effect

Technical Editor:

I would be pleased to have your opinion on the cause for the crepe effect, or "shotty" effect, in the enclosed piece of cloth. I have always been interested in your Questions and Answers Department but this is the first time I have taken advantage of it. *(7081)*

The shotty, or crepe-like, appearance is caused by the use of a hard-twisted filling. It is a condition that cannot very well be avoided when using a hard-twisted two-ply filling such as is used in the swatch submitted for examination.

We advise a filling with a twist multiple of about three times the square of the count for the single and about three and one-half times the square of the count for the ply. Such a twist will stop any tendency of the filling to curl during the finishing.

New Machinery and Processes

Continuous Kier for Cotton Fabrics

A KIER providing a method for continuously and rapidly boiling out textile materials is announced by H. W. Butterworth & Sons Co., Philadelphia, Pa. The machine is designed for subjecting cloth in either open width or rope form to a preliminary treatment comprising boiling in alkaline liquor, spraying, and squeezing. This boiling or scouring operation is for the purpose of cleaning the fabric so that it will be suitable for bleaching, dyeing, or other operations to which it is to be subjected.

Up until now the common method of boiling has been to plait down the goods in a kier where they were boiled for ten to twelve hours. A kier load of goods is usually 20,000 to 25,000 yd., if the goods are 5 yd. per lb., such as common shirtings, narrow sheetings, etc. Under the batch method 2½ to 3 hours is required to load the kier, and the same time to unload it; the operation requiring in all about 17 hours.

With the new continuous kier, it is said that the operation is speeded up so that cloth leaving the gray room in the morning can be diastafored, boiled, and ready for further processing within six hours. In other words, goods in the gray room in the morning may be finished and shipped the same night. The time mentioned applies only to fully bleached white goods, and does not include time required for any dyeing operations that may be necessary.

Another feature in connection with the continuous kier, equally as important as speed, is the uniformity of the bottoming. It is stated that not only is every yard of cloth treated exactly alike, but each piece is free from moats, ticks, and pectin matter. Owing to the uniformity of treatment of the fabric, level dyeing is facilitated. Since no plaiting of the goods is necessary with the new continuous kier, lack of evenness in the fabric caused by channeling of the kier liquor is avoided. Tangling of the fabric is likewise eliminated, together with the consequent necessity of cutting the goods to enable their removal from the kier.

A special feature of the machine lies in the fact that

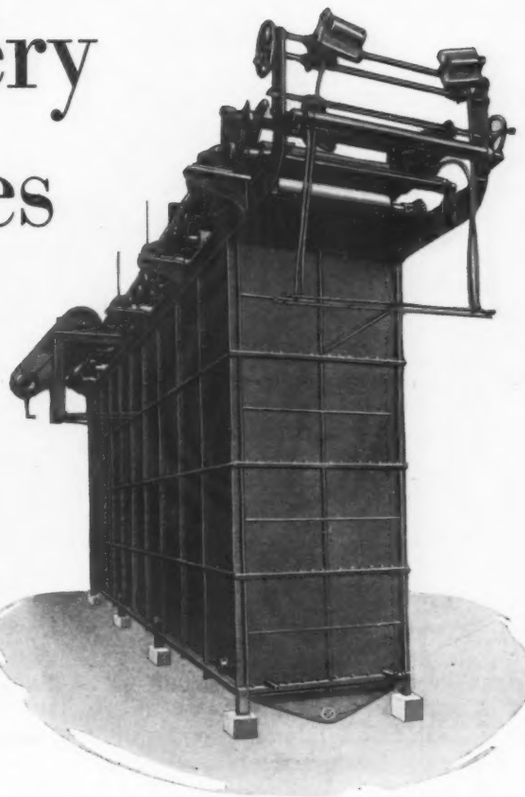


Fig. 1. Continuous Kier for Treating Cotton Fabrics

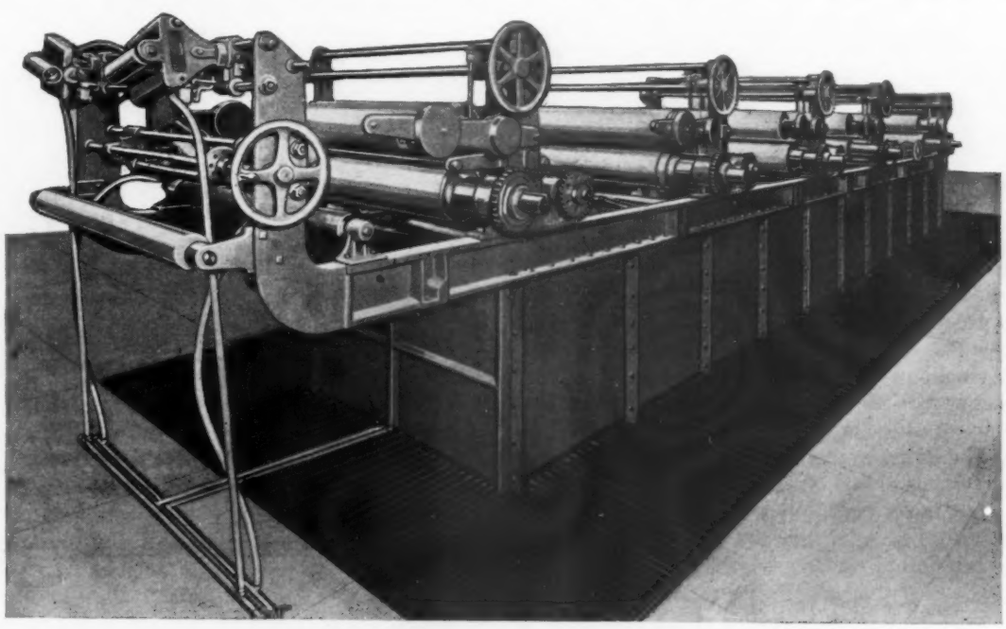


Fig. 2. Upper Section of Kier Showing Entering End, Squeeze Rolls and Grating

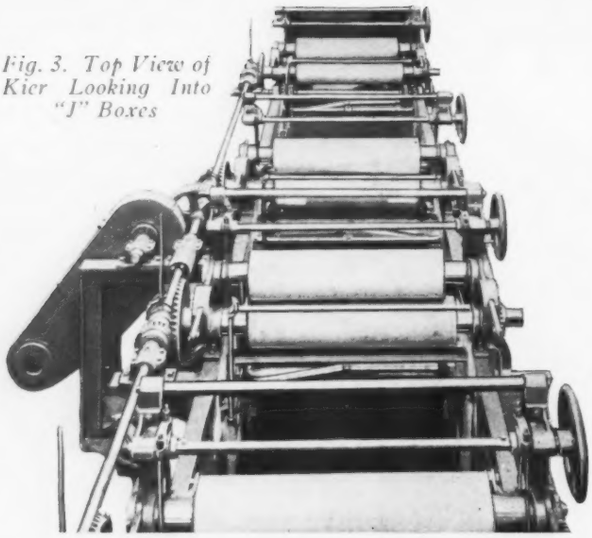


Fig. 3. Top View of Kier Looking Into "J" Boxes

the goods may be treated in a continuous manner with as many repetitions of the treatment as desired, and at different speeds as conditions may require. Again, the fabric can be subjected to kier action with caustic solutions of whatever strengths the textures require, and it may be boiled for different lengths of time in each solution as may be desired or required, while the operation, as a whole, is continuous. The fabric, between each spraying and squeezing operation, is subjected to a boiling in a weak caustic alkaline solution, for any predetermined period which may be necessary.

Advantages of Kier

Other advantages claimed for the kier are savings made in the amount of alkali and water in boiling employed by re-use of the kier liquor and reduction in the amount of chemicals necessary to complete the bleaching process, because of the fact that the goods are completely absorbent and are uniformly receptive to further treatment. Aside from the gain in time afforded by the continuous bleach and the cutting down of seconds because of less handling, it is said that goods treated in the new kier have unusual fullness, show comparatively little loss in width and a gain in breaking strength.

Since 1800 several attempts have been made to improve the method of kiering and run the goods continuously. Due largely to mechanical difficulties, these methods have not been widely adopted. In a statement issued to the textile industry, H. W. Butterworth & Sons Co. said that their own efforts to produce this machine had extended over several years. After the design of the kier was decided on, two machines were installed in widely separated plants, and were operated with utmost secrecy, the management of the plants allowing the Butterworth organization to check up the operation of the machines regularly. In each case the machines were started Monday morning, and worked without stopping until Saturday. The manufacturers state also that the kier, as it stands today, is about four years past the experimental stage, and that they have been compelled to make very few changes since the two machines were installed. During the past two years no changes have been found either advisable or necessary.

Design of Equipment

The new continuous kier is approximately 14 ft. high, 5 ft. across, and about 40 ft. long. The machine is installed with all operating mechanism on the first floor, about 5 ft. of the machine protruding beyond the level of the second floor. There is an iron grating extending entirely around the kier. The machine is designed to handle cotton fabrics in rope form or open width—the ropes running side by side through the machine, and in open width with one piece superimposed on the other.

In Fig. 1 is a general view of the new kier showing the drive side and entering end with Foxwell guiders arranged for two open widths superimposed. The upper section of the kier, seen in Fig. 2, illustrates the five sets of squeeze rollers used for removing the excess liquor from the fabric after each operation of spraying and boiling with alkaline liquors. This illustration shows also the entering end with feeding mechanism, and the grating which surrounds the machine. Fig. 3 is a top view of the kier looking into the "J" boxes where the goods are sprayed and boiled to remove the impurities from the fabric. In this figure is shown the gear drive for the squeeze rollers and expanders for removing creases from the goods (in open width) before they pass through the squeeze rollers.

Hosiery-Mending Machine

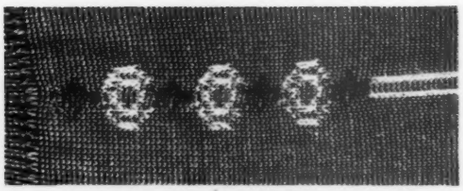
AT LAST year's knitting show in Philadelphia three types of equipment for repairing runs in hosiery were exhibited. Now we are informed that another has been placed on the market, manufactured by Etablissements Vitous, Troyes, France. This machine consists mainly of a needle, an electric motor, and an air pump. The air is conducted through an india-rubber tube from the pump to the handle of the needle. The motor is controlled by a rheostat operated by the foot, which regulates the speed of the machine. A special mechanism is said to stop the machine instantaneously when desired.

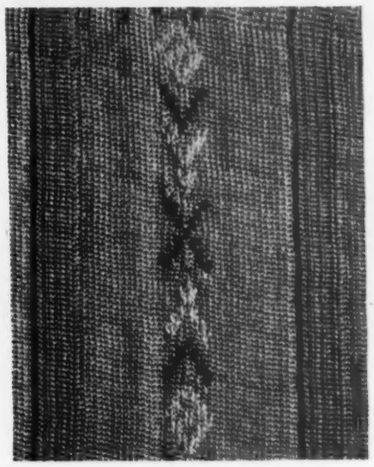
The hosiery to be mended is stretched, as in the case of other devices for this purpose, over the top of a cup. The needle, which is probably of the latch type, is applied to the lower extremity of the run and, due to an up-and-down reciprocation afforded by the air, follows along

Machine for Relooping Runs in Hosiery

Cooling Roller for Warp Sizing

Unit Air Conditioner





Below—Two-Color Clock Between Plain Color Stripes. Above—Two-Color Clock on Half-Hose. Both Made by New Wrap-Stripe Attachment

the ladder, reforming the loops. When the work has been completed, the run is practically invisible. The machine is said to be applicable to hosiery made of silk, rayon, cotton, or wool.

The needle can also be used by hand without the aid of the machine. In this case the operator provides the reciprocation by an up-and-down movement of her hand. The machine naturally affords a greater speed—amounting, it is stated, to a rate of 1,200 loops per minute.

Unit Air Conditioner

A UNIT air conditioner of compact design has been introduced recently by Parks-Cramer Co., Fitchburg, Mass. This type NCH unit is designed for humidifying laboratories, testing rooms, conditioning rooms, small manufacturing spaces, and offices. The unit, which can be placed in the room or located outside the room and connected to it with supply and return air ducts, is said to produce a decided cooling effect during the hot summer weather.

The humidifying unit is of the centrifugal type, handling 15 cu.ft. of air per min. and evaporating up to 4 gal. of water per hour. The manufacturers state that owing to the high efficiency of the spray-generating device the amount of water handled is reduced to such an extent that the power consumption is only 200 watts. Water is thrown off by a rapidly revolving disk in a very fine spray and circulated through the room by a multi-blade fan mounted on the same shaft as the disk. All the water consumed is evaporated. Eliminator plates remove all the free moisture, allowing only the saturated air to pass through.

If desired, the unit can be furnished with an immersion heater, thermostatically controlled to hold the water at any desired temperature. In this device the air, after passing through the humidifying chamber, is warmed by an extended surface heater also thermostatically controlled by a sensitive element placed anywhere in the room. Likewise, if it is wished to control the humidity of the air, the conditioner can be fitted with the new Park-Spray hygrostat.

Cooling Roller for Warp Sizing

THE Van Vlaanderen Machine Co., Paterson, N. J., has brought out a cooling roller designed to improve rayon warp sizing. The apparatus consists of a perforated roller, inside of which a spiral fan is revolving at a high speed. The roller is open on one end and closed on the other; through the spiral fan air is drawn into this roller. The air is then thrown out through the perforations and effects the cooling of the roller. In addition to the actual contact of the yarn with a cold surface, the cool air is blown on the warp through the perforations. The effect of this is that a warp is beamed on the loom beam in a cool state, said to eliminate any possible contraction caused by a hot warp cooling off later on the beam.

In addition to this cooling of the warp there is an oscillating motion, which is effected by the rotation of the roller and a cam motion. This oscillating motion is designed to wind the warp much harder than is usual and to eliminate any ridges or loose ends in either spaces or edges. It is said to be especially effective where flange beams are used, and does away with the uneven building up of the edges near the flanges. This device is driven by an individual motor and can be attached to any Van Vlaanderen slasher or to machines of other makes.

Two-Color Wrap-Stripe Attachment

A WRAP-STRIPE attachment which is capable of knitting two colors interchangeably in half hosiery has been developed by the Hemphill Co., Pawtucket, R. I. A new feeding head for the pattern yarn is so arranged that there are two fingers within the head which are automatically interchangeable with two other fingers. Since the remaining fingers feeding the patterning yarn remain stationary during the operation of these interchangeable fingers, it is possible to make solid-color stripes with clock-stripes by changing the color as the clock is being knitted. There are no horizontal floats made in this way. Stockings may be made as shown in one of the illustrations with a multi-colored stripe surrounded by plain-color stripes.

The interchangeable head makes possible changing the yarn guides in such a way that color operating on one stripe will be transferred horizontally to consecutive stripes and back again. Although this naturally leaves a horizontal float, it gives at times a very desirable pattern. The attachment is fully automatic, simple, compact, and easily attached to existing wrap-stripe machines.

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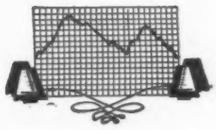
TEXTILE WORLD ANALYST



Some Further Weakness Likely in Wool

Better Foreign Markets Fail to Raise Domestic Raw-Material Prices, Says Dr. Haney

SUMMARY

Sellers' tactics in foreign markets have brought temporary firmness to raw wool, aided by the January spurt in general business, but a little further weakness is probable. Yarns and cloth markets lack independent strength, but manufacturers' replacement margins are expected to hold.

•

The analysis and forecast by Dr. Lewis H. Haney, Director, New York University, Business Research Bureau, which regularly appears on this page, considers various branches of the textile industry from week to week. The conclusions reached in the Analyst are mostly forecasts and generally apply to a time two or three months ahead. The Analyst is based on statistical data and does not reflect temporary trade sentiment.

DURING February, there was a definite change for the better in certain aspects of the wool manufacturing industry. Foreign prices were firmer and domestic activity was greater. Yet domestic wool prices continued to sag, and recently Bradford tops have fallen back again to the season's low level. If the corner had been definitely turned and if the wool industry were beginning a sustained period of improvement, it seems that the raw material prices would have shown greater firmness.

In the cloth markets, demand is poor. Weakness here was emphasized by the action of the American Woolen Co. in reducing its prices on fall staple lines previously opened, ostensibly because of the subsequent further decline in raw wool. But cloth price cuts alone can have only a limited effect in stimulating buying. Employment is poor and January statistics showed a further decline. Purchasing power depends upon a sustained improvement in general business, and this does not seem to have begun yet.

Favorable Factors—The favorable factors in the situation follow:

1. Withdrawals from offerings and the extension of the selling period in Australia have brought some strength to foreign wool markets.

2. Domestic mill consumption and comb activity recovered rather sharply in January; February trade reports indicate further improvement.

3. Stocks of raw wool in the hands of dealers and manufacturers declined more than usual during the last quarter of 1929; and much consigned wool has been sold.

4. Imports of raw wool continue to decline; and the ratio of imports to consumption is the lowest since early 1928.

5. Receipts of raw wool at Boston are the smallest for post-war years.

6. Worsted sales yarns and wool cloth are in a little better statistical position.

7. Manufacturers' margins, both on a replacement basis and on the basis of actual cost, continue to improve.

The Unfavorable Factors—The unfavorable factors in the situation follow:

1. The spreading out of offerings in foreign markets does not reduce the supply which is to be marketed before the new clip.

2. Most wool manufacturing machinery continued to decline in January; looms and spindles were less active than at any time since 1921.

3. Bradford top prices have recently fallen back again to the previous low. Stocks of tops in Continental commission combing establishments on Feb. 1 were 8,000,000 lb. above a year ago and 2,000,000 lb. above a month ago.

4. The P-V Line (a general business barometer) continues below normal.

5. Wholesale dry goods sales declined again in January, and at a more rapid rate than did loom activity.

6. The American Woolen Co. in revising down its fall staple goods prices rather plainly admits a lack of independent strength in the fabric markets.

The foregoing factors indicate that there is a little more strength in the wool manufacturing situation than there was a month ago. This strength has been manifest in the somewhat stronger wool markets abroad during February. Already, however, Bradford seems to be discounting renewed weakness in raw wool, and we doubt if a sustained recovery is yet at hand.

Raw Wool Improves Statistically—A flurry of wool buying occurred in February, which may indicate further expansion of operations following the increased consumption of January. Prices, however, continued to decline in the domestic market, notwithstanding the improvement in domestic consumption and the greater firmness abroad.

Foreign prices strengthened when offerings were curtailed. Curtailment was not of the sort shown last October, when offerings were reduced from 25% to 33%, but rather was an attempt to distribute the supplies in smaller doses over a longer period than was originally scheduled. The effect, however, may be about the same. Prices strengthened for a few weeks, as they did in October. Whether or not the gains will continue will depend largely on the demand. It must be remembered that the total supply on hand has not been reduced by the sellers' tactics.

The TEXTILE WORLD index of raw wool prices declined in February to

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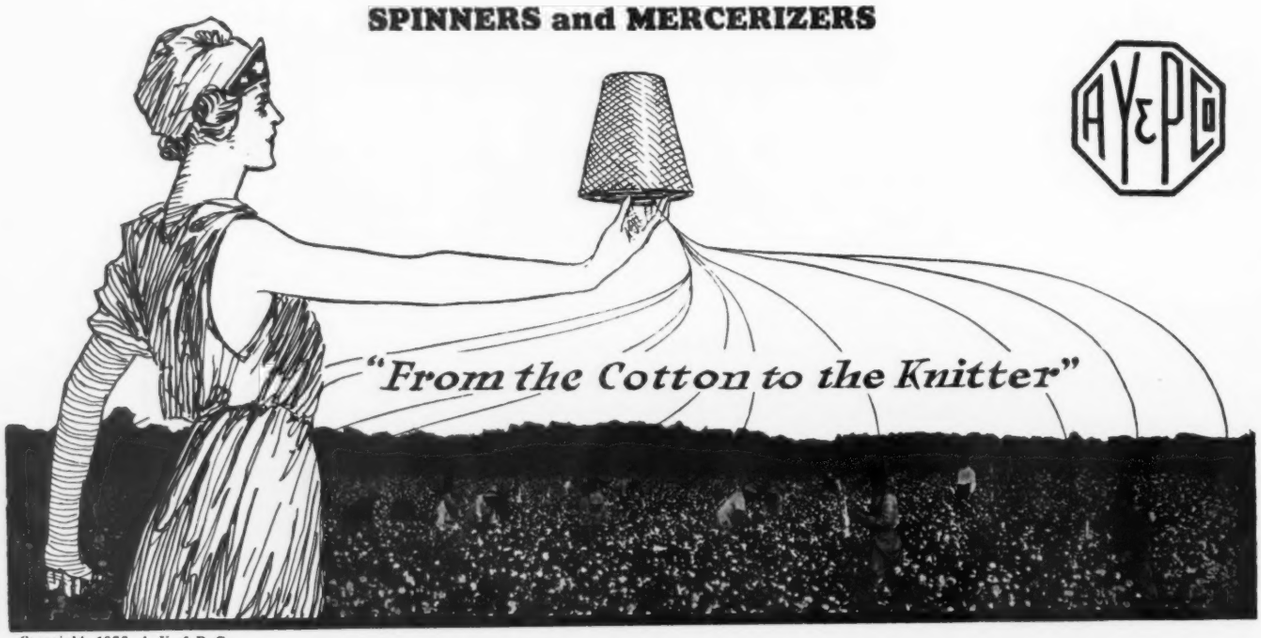
High Point, N. C.

SPINNERS and MERCERIZERS



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73.3% of the 1921-1928 average. This compares with 77.8% in January and 104.4% a year ago. This latest decline brings the index to the lowest level since early in 1922.

For the first time in several months, the average mill consumption of wool increased in January. The seasonally adjusted index was 90.6% of the average for 1921-1928 as compared with 79.5% in December and 104.7% last year. This rebound is analogous to that which occurred in several basic industries in January, such as steel, automobiles, and cotton consumption. Judged by wool trade reports and by analogous movements in general business, February statistics may show a little further gain. Thus far, however, while the activity of combs has begun to increase, there has been no sign of a gain in the activity of spindles or looms.

At the end of December, stocks of raw wool had decreased to 80.8% of the 1921-1928 average, which compares with 84.5% at the end of the third quarter. A year ago the figure was 78.8%. These data suggest a tendency toward a stronger domestic supply situation, and lend weight to the trade reports that certain grades of wool may be in scant supply before the new clip is available.

Meanwhile, imports and Boston receipts continue to decline, the latter being the lowest since before 1921.

As to the future trend of wool prices, the conclusions suggested by our analysis are, first, that manipulating offerings does not remove the fundamental weakness in the supply situation. It seems likely that Bradford is discounting a renewed decline before the old clip is cleaned up. Next, as to the domestic situation, although the wool industry is well liquidated and near bottom, the improvement in general business activity in which the wool industry has participated, seems a temporary move. Prices are too weak to warrant a sharp increase in manufacturing production. Beyond some strength which may follow the February firmness abroad, we are inclined to look for little improvement in raw wool during the next two or three months.

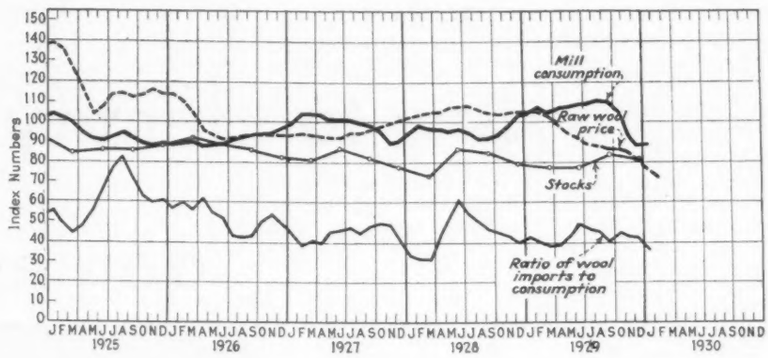

*Fig. 1. RAW WOOL BAROMETER: Price—*Textile World *Index; Mill Consumption—Grease Equivalent, Average Daily, Adjusted for Seasonal Variation, 3 Month Moving Average; Stocks—U. S. Total, Grease Equivalent, End of Quarter, Adjusted for Seasonal Variation. Average for 1921-1928=100 for all three Indexes; Ratio of Raw Wool Imports to Mill Consumption—Imports not reduced to grease equivalent, Adjusted for Seasonal Variation, Consumption as above, Average 1921-1928=50, 3 Month Moving Average.*

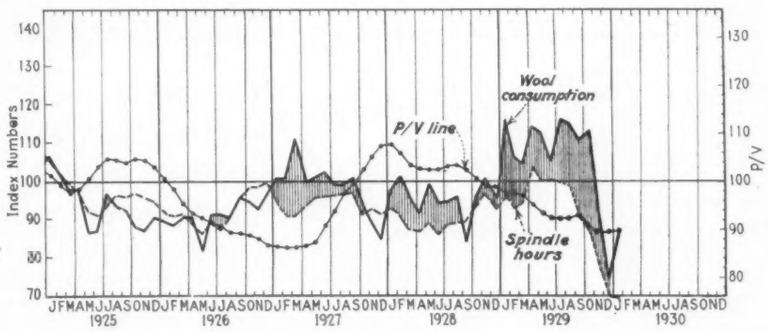

Fig. 2. GENERAL BAROMETER OF WOOL INDUSTRY: Wool Consumption—Grease equivalent; adjusted for number of working days and seasonal variation, 1921-1928=100 (Dept. of Commerce). Spindle Hours—Average of woolen and worsted spindles, per cent active hours to total; adjusted for seasonal variation, 1921-1928=100 (Dept. of Commerce). P/V Line—Ratio of general commodity price index to volume of trade (Bureau of Business Research).

Worsted Yarns in Stronger Position—The Textile World index of worsted sales yarns, in January, declined to 85.0% of the 1921-1928 average, against 87.2% in December and 99.0% a year ago. Again we find worsted spindle activity curtailed somewhat more than loom activity, which leads to the inference that supply of and demand for yarn are in better balance.

Price studies lead us to believe that either cloth prices must rise or yarn prices must decline. The former does not seem probable; hence, lower quotations seem likely for yarns. This is the logical sequence in view of the weakness of raw wool. The improved statistical position of sales yarns, then, will find its reflection in the maintenance of spinners' replacement margins in spite of declining yarn prices. Declines in yarns seem likely to continue, but will probably be no greater in terms of cents per pound than the decline in raw wool.

Wool Cloth Position Fair—The price of wool cloth continues to decline as indicated by the index of woolen and worsted goods prices of the Bureau of Labor Statistics. The January average price was the lowest since April, 1922. This index, which includes both staple and novelty goods, tends to lag the raw wool price index by one or two months. Judged on this basis alone, further declines are in order, as raw wool prices have declined right up to date.

The statistical position of cloth shows moderate improvement each month, but this is reflected in better replacement margins—not in better cloth prices. On the supply side, we find loom activity curtailed again in January. On the demand side, we also find a decline in wholesale dry-goods sales though these are still at a relatively favorable level. Our interpretation is that manufacturers' replacement margins will improve only a little further, but for higher cloth prices we must await a revival in consumer demand.

The Textile Trend

COTTON Textile Markets: Goods buying continued hesitant last week. For the third successive Monday, cotton opened lower and tended downward the next few days. Exporters expressed anxiety over decline in silver market and probable effect on foreign purchases of American goods. Wholesale stocks are low but purchasing is withheld due

ACELE BULLETIN NO. 5

How to identify the various deniers of

To simplify the identification of **ACELE** deniers, the following guide colors are used:

150 denier . . Orange label
100 denier . . . Blue label
75 denier . . . Green label

Each skein carries one lacing thread denoting denier.

The spool flanges are colored according to the denier.

Each cone carries a label inside, a ring of corresponding color on the top and an insert to provide this same identification.

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to unsettlement in primary markets. Print cloth prices turned easier, in line with cotton.

Wool Textile Markets—Reflecting the low basis of raw wool, fall 1930 prices of fancy suitings show reductions ranging from 17½ to 32½c. below fall a year ago. Millmen state that prices are most attractive and should spur consumption which has been lagging for some time. Spot purchasing showed slight increases, but little important business took place before the openings. Worsted yarns steadier in spotty market.

Knit Goods Markets—Several leading full-fashioned mills cut hosiery prices, hoping to stabilize the market; other firms were divided about following suit. Hosiery outlook was still uncertain. Knitters of high-grade polo shirts complained that overproduction of inferior goods hurt market. Underwear demand spotty at heavyweight end; balbriggans, nainsooks and rayons in good call.

Silk Textile Markets—Reports that Japan plans to store surplus silk to strengthen market, brought a firming of raw silk prices, but trade was awaiting confirmation of the news. Throwns also stronger, with increased buying activity by weavers. Spun silk firm; steady demand from broadsilk firms, especially for shantung yarns. Broadsilk movement stressed chiffons and shantungs.

Mill Shares on Steadier Basis

Average Price Has Probably Discounted Average Loss for 1929

MILL statements are coming to hand slowly and are of a mixed character, Celanese producer doing well, silk manufacturers slipping backward. Further information regarding favorable report of Ludlow Mfg. Associates, which appeared on this page last week showing an earning of $13.85 per share in 1929 despite consolidation problems, is to the effect that the various Ludlow mills in India and the United States are operating at 70 to 80% capacity giving employment to about 11,000 persons. The only two major factors which might affect Ludlow Associates in 1930 are the tariff and the Indian situation. Present indications are that the jute schedules will not be disturbed and as to the "free" India movement, so long as Great Britain maintains its vast investment in that country anything approximating a revolution is exceedingly unlikely.

Net earnings in 1929 of 1,258 corporations showed an average increase of 15.28% over 1928. At the top of the list stood amusement corporations with an increase of 85.47% and near the bottom of the list were textiles with a decrease of 4.93%.

Textile shares of 25 New Bedford mills show a net average decrease over three months ago of 2.8% while in the case of 20 Fall River cotton mills the average price decline during the same period is 12.9%. In both markets the situation is now much steadier.

Celanese Corp. Reports Larger Net—Celanese Corp. of America for the year ended Dec. 31, 1929, reports net income of $2,952,321 as against $2,356,976, the largest net in the history of the company. During the year regular dividends paid or declared were approximately $225,000 more than in the previous year. In addition to making provisions deemed adequate for taxes, depreciation, inventory adjustment, and doubtful accounts receivable, $150,000 was appropriated from the year's profit as a reserve for contingencies, leaving $1,111,342 to be carried to surplus or 50% in excess of the amount carried to surplus in 1928. Total earned surplus including that of previous years is $3,111,759.

Cleveland Worsted Sales Larger—The condensed balance sheet of the Cleveland (Ohio) Worsted Mills Co. as of Dec. 31, 1929, showed a gain of $74,881, which is exclusive of allowance for depreciation, maintenance repairs, and interest charges. After allowing for these charges a net loss of $678,346 is reported, as compared with a loss of $1,055,221 for the 1928 fiscal year. Current assets on Dec. 31, 1929, amounted to $6,936,564 and current liabilities $3,336,722, as compared with $5,316,646 and $1,415,316 respectively a year ago. Sales increased $1,500,000 over 1928.

Mohawk Carpet Profits Steady—The Mohawk Carpet Mills, Inc., Amsterdam, N. Y., reports for the year ended Dec. 31, 1929, net income of $1,812,140 after depreciation, federal taxes and interest, equal to $3.02 a share on the 600,000 no-par shares outstanding; in 1928 the company reported a profit of $1,863,205, after similar charges, equal to $3.10 a share. In a statement to stockholders, George McNair, chairman of the board stated that sales in 1929 increased 24% over 1928, but that lower list prices materially reduced profit margins. Current assets as of Dec. 31, 1929, totaled $13,438,304 against current liabilities of $3,577,002.

King Philip Mills Tax Rebate—The King Philip Mills, Fall River, Mass., were assessed $894,400 in excess of their true valuation for 1927 and $525,000 in excess of their true valuation in 1928, and are entitled to an abatement of $31,840 and interest of the 1927 taxes, and $21,420 and interest of the 1928 taxes, making a total abatement of $53,260, with interest, due the mill, according to the findings of Charles P. Rugg, of Worcester, Mass., who heard the case as special commissioner appointed by the Superior Court. The directors held an extended meeting March 4, discussing a merger proposition, it was believed. They declared a dividend of 1½% payable April 1 to stockholders of record March 20.

H. R. Mallinson & Co., Inc., silk manufacturers, New York City, reports for the year ended Dec. 31, 1929, net loss, after depreciation, interest, bad debts, etc., of $758,183, as compared with a net profit in 1928 of $919,835. Net profit on sales in 1929 amounted to $140,963 as compared with $1,897,228 in 1928. On Dec. 31, 1929, current assets totaled $4,763,051 against current liabilities of $2,292,705.

The Century Ribbon Mills, Inc., silk manufacturers, for the year ended Dec. 31, 1929, shows net loss of $27,269 after expenses, depreciation, etc., against net profit of $60,781, equal to $4.10 a share on 14,795 shares of 7% preferred stock in 1928.

Potomska Makes Gain—The Potomska Mills Corp., cotton goods, New Bedford, Mass., earned $56,658 in 1929 after depreciation charge of approximately $76,000, as compared with a loss in 1928 of $59,000 after depreciation charge of $99,000. Net quick assets increased $115,849 to $1,076,896 during the year.

Montreal (Quebec) Cottons, Ltd., for the year ended December 31, 1929, showed net income, after all charges, of $170,441, equal to $5.68 a share on 30,000 shares of 7% preferred stock. In 1928 net income was $395,308, equal after preferred dividends to $6.18 a share on 30,000 $100 par common shares. After payment of dividends on the preferred and $6 per share on the common stock, there was a deficit for 1929 of $219,559, compared with a surplus of $5,308 in 1928. Sales totaled $4,704,905, a decrease from 1928 of $382,909.

Belding-Heminway Elects Directors.—The annual meeting of the Belding Heminway Co., was held in Hartford, Conn., Tuesday, and the list of directors presented to the stockholders by the management was elected. Minority stockholders opposed management policies and, through Robert Kast, questioned the company's executives at length. Finally, the entire meeting voted approval of the management's policies during the year. M. H. Heminway presided and outlined the company's plans, stating that numerous steps to improve the firm's business were projected.

U. S. Worsted Situation—In his first report, filed in the Superior Court, Boston, Mass., B. Loring Young, re-

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The fabric used in these pajamas is Zeppelin Pique, an all Bemberg fabric made by Bert Levi & Co.

Our experts in knitting and weaving, our Educational Department and our Cooperative Merchandising Department are at your disposal to assist in the development and distribution of quality fabrics made of Bemberg.

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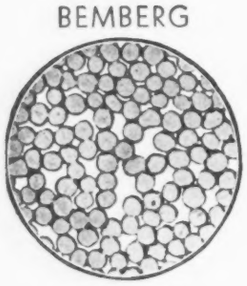


Cross Section of Yarn
150 Denier—112 Filaments

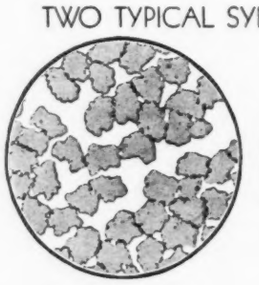
SILK

Cross Section of Yarn
150 Denier—112 Filaments

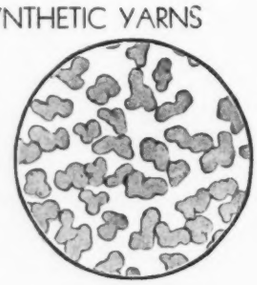
Bemberg
BRAND YARN

Fabrics made of Bemberg have natural subdued luster, drapability, softness, strength — the multi-multi-filament feature of Bemberg Yarn is one reason.

TWO TYPICAL SYNTHETIC YARNS



Cross Section of Yarn
150 Denier—32 Filaments



Cross Section of Yarn
150 Denier—30 Filaments

These cuts are from microphotographs of yarn magnified 300 times, as used by the Better Fabrics Testing Bureau, Inc.

AMERICAN BEMBERG CORPORATION, 180 Madison Ave., New York City

ceiver for the U. S. Worsted Co., states that assets of the company total $1,157,579 against liabilities of $3,501,323, and urges that all of the property of the company, including real estate, machinery, and supplies be sold immediately at private sale. There are less than a score of known creditors, the largest being the Old Colony Trust Co., as trustee, which holds an unsatisfied judgment in the Superior Court for $3,463,024, obtained in its suit against the company for failure to pay interest on $2,853,100 debentures. Total current assets are estimated at $429,718, and the appraised valuation of the real estate and machinery is $727,861.

Southern Textile Shares Quiet—A group of 25 of the more popular issues of southern textile common shares showed but little change in their bids for the week ending March 1, according to figures released by R. S. Dickson & Co., Charlotte, N. C. The average bid price for each share closed for the week at 84.84 as compared with the bid of 84.80 for the previous week. A number of the common stocks of the Belmont group continued in fair demand with the bids increased fractionally; however, at present low levels holders appear to be unwilling to offer their stocks, and as a result the volume of trading has become small and the market inactive.

Boston Stock Auctions—The following sales of textile shares were made at Wednesday's auctions:

Shrs.	Mill	Par	Price	Change
75	Associated Textile, com...	100	35-36½	....
25	Hamilton Woolen.....	100	43	—½
2	Berkshire Fine Spinners, com.....	...	25½	....
4	Newmarket.....	100	34	+4
10	Naumkeag.....	100	90½	....
20	Pepperell.....	100	100½	+1½
5	York.....	100	7	+⅛
25	Dartmouth, com.....	100	62	—18
100	Nashua, com.....	100	35¼	—¼
31	Nashua, pfd.....	100	79	—1
20	King Philip.....	100	105½	....
12	American Mfg., com.....	100	59½	—1½
3	Ludlow.....	...	148½	—2
232	United Elastic.....	...	36½-38	+3
564	Total			

Textiles on N. Y. Exchanges—The following shows the movements of the leading textile stocks listed on the New York Stock Exchange and Curb for the week ended Mar. 5:

	High	Low	Last Sale	Net Change
American Woolen....	18¼	16¼	16¾	—1½
American Woolen, pfd.	42¾	40¼	40¾	—1¼
Belding-Hemingway..	5¼	5⅛	5⅛	—¼
*Blumenthal.....	41	39	39	—5
Cannon Mills.....	32	31¼	31¾	+⅛
*Cohn Hall Marx.....	....	....	....	....
Collins & Aikman....	31¾	29	29½	—¾
Consolidated Textile..	1¼	1¼	1¼	—¼
Duplan Silk.....	17¼	17¼	17¼	—1
Durham Hosiery, pfd.	57	55	57	+1
Gotham Hosiery.....	26⅛	25¼	25¾	+⅜
Kayser, Julius.....	38½	37	37½	—⅛
Kendall, pfd.....	88	86	88	+3½
Mallinson.....	10¼	9	9	+1
*Mock-Judson.....	23¾	23	23¾	—⅛
Mohawk Carpet.....	35½	30	31½	—⅛
Pacific Mills.....	29⅛	28½	28½	—1
*Pepperell Mfg.....	105	105	105	....
Phoenix Hosiery.....	10¾	10¾	10¾	—2¼
Real Silk Hosiery....	58¼	56¼	58	—¼
*Tubize.....	138	131	138	+7
United Piece Dye Wks.	28¼	26¼	28¼	+1½
Van Raalte.....	18⅛	18⅛	18⅛	....

*Listed on Curb.

February Poor Cotton Yarn Month

Small Yarn Sales Total Somewhat Larger Than Expected

PHILADELPHIA.

DEALERS and commission houses have added their daily totals for the month of February and, as is usual under hand-to-mouth trading, which has been even more severe since the cotton market began its drastic decline, find that they did more business than they expected or thought they were doing from day to day. From this it should not be deduced that trading proceeded upon a satisfactory basis during these four weeks, but it was better than day to day reports indicated.

There was little to choose between January and February with most houses, which state that totals for five weeks of January were about equal to the trading at the February rate of activity. The same months will show a smaller total compared with last year, with several concerns averaging more than 10% smaller this year than in corresponding months of 1929. Although this is not a good showing, it indicates that trading, as many would have us believe, has not entirely stopped.

Better Than Expected—One of the largest groups of combed mills in the country reported each week during February that business was "terrible," but when they added up their business for the month they found that they had shipped on order approximately 80% of their normal production. This cannot be termed "very poor," although it is not good, but it does demonstrate that small day to day orders mount up to a larger total than most selling houses believe possible.

Trading throughout the present week has been on a slightly less active basis than it was during February. Manufacturers are becoming more conservative in making new commitments, and the size of orders placed has been decreasing. There is little disposition to speculate; no manufacturers seem willing to take chances, and fewer selling houses than heretofore in such periods are willing to sell short in order to stimulate quick business.

From a spinner's standpoint the situation is shaping up better than the most optimistic could have hoped, with more spinners curtailing and keeping production within reasonable limits than ever before in dull periods. This is no longer a matter of policy or choice with spinners, but is becoming more and more a matter of necessity. Their margins above raw cotton are so abnormally small that they lose several cents a pound on many counts at current quotations. This is usually the cry of spinners in dull times, but their margins have contracted further this time than for many months past.

Smaller Sales Reported—Sales in most instances have called for a few packages of weaving or knitting yarns to be shipped from local stocks, 15,000 lb. sales being the exception, and as large as have been reported for the week. To keep abreast of this condition more spinners have been curtailing than in past dull-demand periods, and when buying improves, as is expected when raw material gathers more steadiness, spinners will not have to wait long before they receive benefit from this, since there will be no excessive stocks to be liquidated.

Evidence that spinners' margins on carded yarns are as low as they are likely to go may be seen from the fact prices have held steady this week. There is little change in spinners' quotations and no important change in actual selling price, although demand has been smaller and the cotton market displays no amount of stability at the lower level. Quotations of 20s-2 warps have held steady at 30½c. level for ordinary quality and 32c. to 33c. for plush, while 30s-2 are quoted at 36c. and a cent or slightly more higher for better grade warps. Sales are being made from local stocks at one cent lower than spinners are willing to accept.

Carded knitting yarns are quoted at 26c. for 10s for ordinary quality, and there are reports of sales to up-state knitters at a half cent lower, although no large quantities have been involved. There has been comparatively little demand from this trade since the buying wave of January, when large amounts of both carded and combed were taken for delivery during the next three months.

Combed yarns, single and ply, are quiet, and mercerizers, the largest consumers of the latter, are delaying specifications on old contracts in most instances. Yet combed yarns hold fairly steady in price, and spinners point to the fact that long-staple cotton is strongly held, and as the cotton market declines the longe-staple differentials are rising, in effect making the staple cotton very little cheaper than it was last fall. This relative strength of staples in the face of drastic decline in futures is the most important factor in this branch of the yarn market.

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NEW YORK—What business is being done in cotton-yarn market is not of the pleasant variety. Prices continue to be a matter of guesswork. A quotation that will land an order today may be a cent too high tomorrow, or, conversely, what may be high today, may land an order tomorrow. Under such circum-

Fabric made of ordinary rayon — *Fabric made of Chardonize*

This photograph (taken with the light behind it) of two fabrics identical in construction—one Chardonize, the other ordinary rayon, shows how much better Chardonize covers than ordinary rayon fabrics. The enlarged unretouched photomicrographs indicate the marked difference.

NOTICE how closely the luster of the Chardonize fabric resembles the pearls in the necklace.

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stances published quotations can do little but give a fair average. Just as a bit of steadiness is in evidence, cotton has another sinking spell or some dealer or spinner becomes desperate and orders are taken at almost any price.

The tone of the market makes it increasingly evident that there is a bit more stock yarn lurking about than is healthy. Many individual mills believe that they can, and must, run full. All too often the result is that they save a bit in overhead by keeping up a high rate of production, but accumulate stock which they are forced to sell at ruinous prices. Everyone is agreed that all the mills can't run all the time, but unfortunately most individual units believe that some kind genii will see to it that they fare differently from other mills.

A group of prominent carded yarn spinners, after conferences held in conjunction with The Cotton-Textile Institute, have recommended that spinners voluntarily confine themselves to 55 hours per week for day work and 50 hours per week for night work. All overtime would be discontinued. It is felt that such a policy would aid in regularizing employment.

Factors in the market who take a long range view believe that there should be some increase in volume of business in a week or two, but the price situation will take longer to clear up. Even a rise in raw cotton would not be as stimulating as usual, since there are too many mills hungry for orders. Nothing but a large increase in volume could straighten out the price tangle at once, and such an increase is not expected. It is believed, however, that things are about at their worst right now, and some slow improvement may be looked for.

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BOSTON.—The cotton yarn situation shows no change for the better; if anything the market has reached a still further stage in price demoralization. There is not sufficient business to establish firm values. A considerable amount of stock is pressing for sale owing to further over-production by a number of spinners. The market seems to be having a general house-cleaning; sales are made without consideration of profits, with prices on carded yarns generally weak and a wide price range on any given count.

New low prices were made very generally; the slight recovery in cotton, being considered temporary, had no influence in sustaining the market. It is very much of a buyer's position, and yet buyers show no particular interest, but buy on a hand-to-mouth scale and seem quite confident that the market cannot get away from them. Spinners' prices, although close to cost even on current cotton basis, meet with little approval from prospective buyers. This is an exceedingly difficult and disturbing position for the mills, which are very generally working on a cotton supply much higher priced. Buyers, however, intent on their own end of the industry, are keeping their stocks to a minimum.

Continued Depression Kills Profits—Commissions are going by the board in the attempt to close sales. Some dealers affirm that in order to keep their customers they have to sell at a loss, and that the yarn position as a whole is semi-chaotic. In the meanwhile cotton hovers around the 15c. level.

While the low-count carded yarns are experiencing the full force of the depression, the finers counts and combed and mercerized yarns are involved in the general disturbance, and prices are lower all along the line. There is a vast over-supply of cotton yarns, and the increased spindle activity in January, which continued probably throughout February, was altogether unnecessary and unwarranted at a time when demand was so uncertain and the raw material was under the influence of forces closely related to possible action or inaction of the Farm Board.

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CHARLOTTE, N. C.—The feeling of uncertainty which has been current during recent declines in raw cotton, continued to exist in the Charlotte-Gastonia yarn center during the week and comparatively little business was reported as going through. Prices were slightly weaker despite efforts on the part of certain spinners to maintain their margins. Carded yarns were sold on the basis of 31c. for 20s-2 and 36c. for 30s-2. No appreciable improvement in the combed yarn situation was observed.

Worsted Yarns Wait on Goods

Men's Wear Fabric Sales Will Guide Spinners

PHILADELPHIA.

ALTHOUGH there is price-cutting in both weaving and knitting counts, the sales yarn market presents a steadier appearance, and nominally spinners have made no changes in quotations during the last two weeks. There is a less confident feeling among weavers and knitters alike, and slightly smaller poundage has been moved than in recent weeks.

It is still between seasons for smaller men's wear manufacturers, although American Woolen Co. showed new fancies on Monday this week. For this reason the sales yarn market has not felt the effect of the heavyweight showings. Local manufacturers will open this week and next, and opinion among mixture spinners is that yarn business will be slow to develop this season, due to a number of disturbing factors in goods selling centers affecting this situation at the moment.

Specifications Are Good—Mixture spinners report that specifications on old contracts from men's wear manufacturers are good, indicating that a number of these concerns are making up stocks of their heavyweights, the lines they feel will prove to be the most popular this season. Little new yarn contracting has been found, although both Bradford and French mixture spinners are reaching for this important business. French mixtures are available at lower figures than are nominally quoted, several manufacturers stating they can "better" $1.80 for 2-30s, 64s mixes. Lower prices have not been confirmed by reputable spinners.

Men's wear manufacturers state that in most instances they are being quoted approximately the same prices for Bradford and French-spun mixes, and a number state that the former differential in price between them in favor of the French is rapidly disappearing, and that it is becoming almost a recognized fact in the trade that French mixture spinners are no longer quoting five cents more than Bradford, as formerly.

The tendency, previously emphasized in these columns, toward the use of finer stock and finer counts in outerwear, is going forward with added momentum. Manufacturers specify, for example, 1-15s, 58s, for coats and bathing-suits this season, where they formerly used 48s or 50s grade; in count the same mills are asking for single 25s where they formerly used 15s and later 18s or 20s.

Trend Toward Finer Counts—In two-ply counts there is a same trend, and knitting yarn spinners are not only selling 2-40s, 64s, in larger quantities than before, but they report that more manufacturers are inquiring for 2-50s for knitting purposes, sales of the latter being reported at $1.90 in the gray. These manufacturers assert that knitted fabrics for women's suits and dresses are making serious inroads upon the woven materials formerly used for these purposes, and indications are for this trend to become more noticeable, in view of improvements being made in knitting equipment.

Trading in outerwear counts is proceeding at the former pace, not quite so active as it should normally be at this time of the year, but relatively better than weaving demand. Single yarns are being taken better than two-ply, showing that the bathing-suit demand, as to be expected, is coming

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YARN IS THE BEGINNING OF FABRICS, FROCKS AND FASHION

along at this time of the year in preparation for the spring and summer season, which will be one of the largest that worsted bathing-suits have enjoyed. Yarn purchases indicate the goods this year will be higher in weight than formerly and probably not quite as durable as the more substantial garments made from two-ply and coarser counts.

Quotations Unchanged — Two-ply outerwear counts are selling on $1.22½ basis for 2-20s, 50s, or $1.40 dyed, with smaller, independent spinners selling 2½c. less. Several spinners report that they are operating on 60% capacity basis, as in February and are shipping out the bulk of their output instead of putting it into stock. Spinners of single yarns in this section are fairly well occupied making delivery on old contracts.

◆Raw Silk Strength Aids Thrown Silk

THROWN silk yarns reflected the sudden strength registered in raw-silk prices last Tuesday, and though it was too early to estimate the staying power of the new firmness, throwsters were hopeful that the backbone of the prolonged lull had been broken.

Cautious factors warned against overconfidence, however; it will be another week or ten days before the real significance of the trend can be gaged. Thrown yarns were decidedly weak, last week, and prices declined 10 to 15c.; the softness carried through the week-end to Monday, but the stiffening of the market on Tuesday, sent prices about 5c. up, cutting the drop to 10c., or less.

Buying was slightly better on Monday, and took a big jump on Tuesday, especially in weavers' yarns. Organzines and crepes were in active call, and mills were eager for early shipment. The mills appeared to be expecting a further rise in thrown yarns and placed good-sized orders.

◆Active Demand For Spun-Silk Yarn

SPUN silk yarns moved actively, especially the 60s two-ply. Manufacturers were interested and confident, and good-sized orders were placed, business being mostly on a spot or nearby basis. The weavers are enjoying a high-pressure movement of their shantungs, and have increased their output accordingly, bringing a proportionate increase in the call for shantung yarns.

Spinners generally were in satisfied mood this week; orders were slightly ahead of last year, and indications were that the trade would enjoy an excellent spring turnover. Announcement by the Spun Silk Research Committee of its plans for "Sport Silk Week" also served to stimulate interest in the consuming industries.

The increased attention paid by weavers to spun-silk fabrics and the wide variety of attractive fabrics made from this yarn which are now on the market, plus the decidedly good response shown by both cutters and piece goods buyers, has helped to strengthen the market. Prices are firm, and orders in some cases are in excess of output.

Tub silk (Lavelle) yarns were reported "sold out" by several leading spinners; these firms are booked solid on output, and will not take further business for shipment this season. Tub silk yarns have proved very popular, for dress and pajama fabrics especially.

Rayons Generally Steady

Price-Cutting on Acetates Reported; Demand is Mild

THE rayon-yarn industry entered March with both demand and prices reasonably steady. There is no occasion for jubilation at any end, and some aspects of the market are far from satisfactory. The industry could not be said to be particularly prosperous, but the outlook, particularly at the woven fabric end, is good. One of the strong points of the moment is the sustained demand for rayon flat crepes; these have won a hearty consumer acceptance, and broadgoods mills enjoy a fairly rapid turnover, resulting in a steady demand for flat-crepe yarns.

Recent reports of sub rosa weakness in the yarn market have proved to be only partially substantiated. Certain producers of viscose process yarns placed quantities of odd lots of yarn on the market at reduced prices early in the year; this could not be said, strictly speaking, to constitute price weakness. It was a clearance proposition; the yarn was not regular numbers, the total turnover was small, as sales go, and the prices of viscose process yarns have held fairly steady since that clearance. Viscose yarns, especially the 150/24s, are selling at list prices for the most part.

Sell Firsts as Seconds?—Consuming industries hear reports of producers selling firsts as seconds, in order to effect turnover. This has always been done on a small scale, and an inquiry in the market this week failed to show any extended trend in that direction. The spokesman for one important rayon-consuming house said he had no knowledge of such practices by the large producers, and did not believe the reports were authentic. This factor pointed out that it is his particular function to trace down such reports, and that he had not been able to find any concrete instance to confirm them.

Acetate yarn prices appeared to be decidedly weaker. One producing company, according to a customer, is quoting elastic prices, and is not averse to drastic reductions to make quick sales. These cuts are being offered mainly to the weaving trade, it was asserted.

Two Prices Quoted—The same firm cited cases where acetate producers would quote two different prices to two different firms for the same number. The spokesman for this concern added that the result of that policy has been to make buyers hesitant and suspicious. A stable policy on acetate yarn prices would do much to improve the situation both from the point of the producer and the customer, he declared.

Broadsilk mills at present are buying rayon yarns on a strictly hand-to-mouth basis. These firms usually can get immediate shipment on desired numbers. One exception to the hand-to-mouth practice is 150/24s, which go into rayon flat crepes. These fabrics are moving so well that mills have no hesitancy in buying ahead and some firms are covered for a few months.

Purchasers of yarn this week said they did not look for any rayon price change prior to April, and possibly not then. One factor added that he had made some specific inquiries on that score, and had been authoritatively informed that no change was in sight.

◆Cotton Strips Most Active Waste Stock

BOSTON.

THE cotton waste market is doing a restricted and somewhat unprofitable business. The weak position shown by cotton is helping to keep consumers out of the market under the usual expectation that by waiting a little longer they will be able to buy the commodity they need on a lower basis. Comber is maintaining itself fairly well, the best quality around 90%. There is some movement in the several strips and a little in the better grades of fly. Threads are no more active than they were, but prices are fairly firm. Increased activity in cotton manufacturting during January will of course be reflected in larger supplies of waste but if the consuming demand has kept pace all will be well, but of this there is no certainty.

Effect of Decline on Inventories—One of the chief disturbing events associated with a steady decline in prices such as has been seen for the year to date is the effect which it has had on inventories and stocks held by contracting houses. To handle the situation successfully calls not merely for skill and knowledge of the consuming market,

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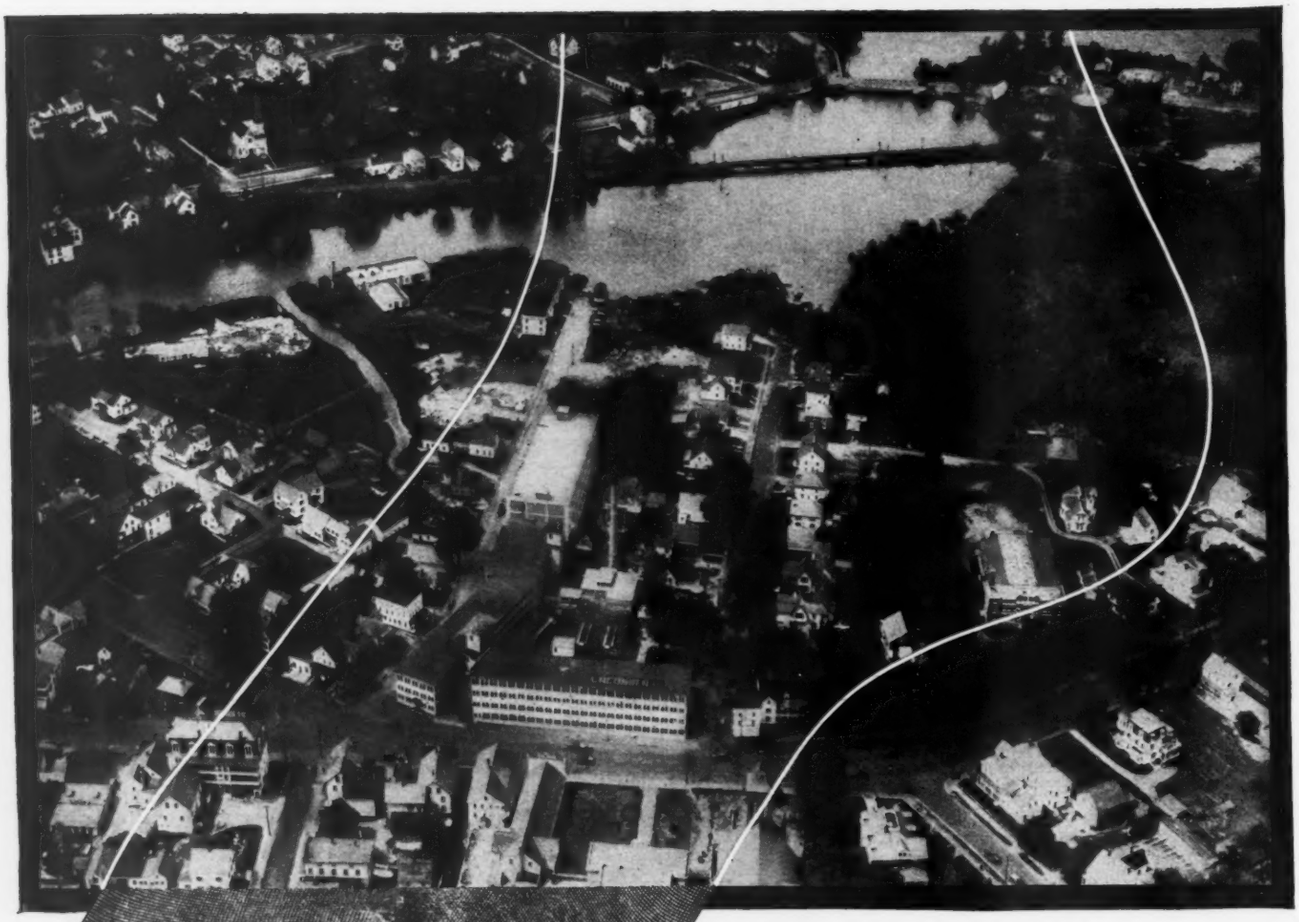

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The turnover in strips for some time has been relatively large. It would seem as though the decline in cotton had actually brought about a larger demand for strips, that consumers had found that good strips were better material to use and relatively, if not actually, cheaper than the large quantities of off-grade, colored, stained, and generally untenderable cotton available. The best comber is maintaining its percentage basis firmly at 87½ to 90%. One or two houses, however, have been selling steadily around 82½% for an average quality. Traders are willing to pay 85% for a good comber at this time.

◆Wool Top Industry Registers Snapback

BOSTON.

A BIG surge of wool top buying has occurred recently, set in motion at a time when wools at home and abroad were apparently at the low point of value. The buying was centered chiefly on the merino grades, and a considerable portion was for tops adapted to French spinning.

The general demand for months has been running largely to French-combing and short-fiber tops, entailing the purchasing of the French combing types in merinos and wools of the fine and fine-medium type in original bags.

Much of the recent buying can, of course, be attributed to the prospects for worsteds this season, with many of the staple lines already opened and the American Woolen making a large showing this week. It has nevertheless been a price market to a large extent, and it may further be said that the cheap tops of 64s grade were not applicable to, nor indeed to be used in, worsted counts as high as 50s.

Low Price Refused—After considerable amount of business had been placed in tops at around $1, a firmer wool market both in this country and abroad led to a refusal on the part of standard topmakers to accept any further business at this price and the quotation for a staple fine top was advanced to $1.03-$1.05.

The wool-combing industry, which for the preceding three months had been steadily declining in active machine-hours, turned upward 6% in January. The representative of a large independent topmaker stated in reply to a question as to the general outlook for the wool top industry, "The top industry and market may be much better; it will not be any worse. There will be either a good upturn in the next few weeks, or a very slow summer season."

Bradford Weak Again—The Bradford top market has developed further weakness in the merino grades, tops from 60s to 70s being off 1d. per lb. The 64s warp top is now quoted 29d. which is within ½d. of the low price made last year. The low crossbred tops from 40s to 64s made a gain of ½d.

Total imports into the United States of tops of wool, camelhair, etc., for 1928 were 63,500 lb. only, but in 1929 there was a large increase to 728,000 lb.

◆Wool Substitutes Low-Priced and Slow

BOSTON.

THE general substitute market, covering materials offered as substitutes for virgin wool, is at this time on the lowest price level that it has reached for many months. Whenever such a situation arises, there is seen a considerable development of what may be termed inter-market competition—for example, colored mill threads, competing with colored noils, and both competing with other similar reworked materials. This type of competition is actually seen at present, but is difficult to report. When the general price level rises and mill demand broadens, the markets assume their usual functions.

Mixed Rags at Low Price—Although graders are able to purchase mixed rags at the low price of the year, they lack the courage to anticipate future demand from the woolen industry, and are certainly not loading up. In foreign rags, considerable importing interest is seen, with some importers rather disturbed over publication of probable prices paid in the foreign markets. This market is afflicted with the unprogressive sentiment seen in other waste markets, in which the suppression of all reference to prices is considered the prerequisite of an ideal market report.

◆Rayon Waste Dealers Resist "Bargaining"

RAYON waste demand was light and slow. Neither converters or manufacturers showed any real interest, and even inquiries for future business registered a sharp decline. Waste dealers endeavored to hold prices to current low levels, but admitted that this was difficult. Customers were in the market only for "bargain" buying, and frequently absurdly unprofitable offers were made. One dealer remarked that he "could sell anything and everything at 10c. a pound." Real buying was not to be had, apparently, and the trade is waiting in the hope that things will brighten up with the advent of mild weather.

Woolen and worsted fabric manufacturers have placed little or no waste business as yet; their new lines are just beginning to move among cutters and piece goods buyers, and waste dealers look for a pick-up in demand from this end within the next few weeks.

Converters were quiet, both as regards buying and selling. They did some sampling of waste, but are holding off on actual purchases.

Cotton Market Lower

Trade Buying Checks Declines But Fails to Follow Advances

THE buying movement which developed when May contracts first broke through the 15c. level on Tuesday of last week, was supplied on comparatively moderate recoveries. May sold up from 14.95 to 15.59, but the failure of demand to broaden on this advance seemed to make rather a bearish impression on sentiment and the market later became nervous and unsettled owing to a change in the policy of the Farm Board with reference to purchases of grain. Pressure increased accordingly and the break which followed established new low records for the season on all positions, with May selling down to nearly the 14¾c. mark before the end of the week. On Thursday May broke below 14½c. under continued liquidation.

The improved technical position asserted itself in considerable covering, and trade demand again increased below 15c. for May, but the market became quiet on the rallies. Evidently there was no aggressiveness on the buying side, owing, doubtless, to accumulating evidences of an adequate supply and doubt as to whether the South would make an adequate cut in the acreage.

Adequate Supply Evident—The fact of an adequate cotton supply has been emphasized by reports from the cotton goods market. According to the report of the New York Cotton Exchange, the Garside figures place the world's consumption of American lint cotton for the six months ended Jan. 31 at only 7,127,000 bales and says present indications are that the world will not use more American cotton in the second half of the season than it used in the first half but that it may use somewhat less. This report has been interpreted by cotton traders as pointing to a world's consumption for the season of around 14,100,000 to 14,250,000 bales, whereas ginnings in running bales are expected to be in the neighborhood of 14,700,000. The figures of the International Federation of Master Cotton Spinners and Manufacturers Association on the world's mill consumption and world's spinners' stocks of American

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cotton and of all growths for the first half of the season, will probably be published within the next few days. On March 20 the Census Bureau will publish its report on ginnings for the season which of course, may vary one way or the other from indications based upon the Government's December forecast. These figures will give rather a firmer basis for estimates of the probable end-season carry-over, but that the supply will be ample is now generally conceded.

Basis Is Sustained—Meanwhile reports reaching here from the South indicate a generally well-sustained basis. Buyers seem able to cover their requirements, but there is no indication of selling pressure. The Federal Farm Board continues to advance the farm loan values of last October to the cooperatives, who, in turn, are receiving cotton in some States, at any rate, and this is probably responsible in some measure for the lack of spot pressure. The change of Farm Board policy with reference to grain referred only to the purchasing of grain in the open market by the stabilizing corporation which recently was reported a buyer at the October loan values. Under the new ruling they will buy only at the open market price, but the grain cooperatives can continue to secure loans from the farm board on the basis of the October loan values.

As the Farm Board affiliations had not entered the cotton market as a general buyer, this, of course, did not necessarily foreshadow any change whatever of policy in the cotton market. Nevertheless the weakness of wheat, and for that matter of commodity values quite generally, seems to check confidence in prevailing price levels, and this, no doubt, has partly accounted for the rather cautious attitude of cotton goods buyers at home and abroad. As a matter of fact there can be little doubt when producers resort to holding and so-called orderly marketing, either with or without Government assistance, that middle-men and manufacturers are likely to follow the policy of hand-to-mouth buying, so long, at least, as that remains the attitude of the ultimate consumer. There has been no change of sentiment with reference to the probable acreage. One of the local authorities in a preliminary canvass said the prospects were for a decrease of about 3 to 6%.

●

MEMPHIS, TENN., March 3—Activity in the cotton market here is at a low ebb, although a moderate amount of business is passing between shippers and first hands. No shipper is getting enough inquiry or actual business to satisfy him, and shippers generally are working almost entirely on old commitments. There is very little short interest, except on descriptions or types that have been hard to find; this short interest, while annoying, is not likely to prove burdensome, owing to the fact that it is rather limited. On the other hand, there is an extensive long interest in one or two strong hands, who have effected a practical "corner" on grades and who appear to be making no definite effort to push sales, although admittedly disappointed that demand continues to lag.

Liverpool Demand Disappoints—The failure of Liverpool demand to improve, where much had been expected, is a keen disappointment; the size of Liverpool stocks of American cotton and the poor staple and quality of the Texas crop had led to great expectations, although Liverpool has not been a consistent customer in this market for several years.

There is a feeling of relief that first March notices, in the futures market, are out of the way and a general disposition to believe that the atmosphere has been sufficiently cleared for the market to resume something like a normal course. Co-op interference with economic laws is generally blamed by the trade here and by most of the cotton growers of this territory, in the main, for unsettled conditions in the cotton market.

●

BOSTON.—Confidence in cotton is being slowly established. The recent drastic decline was a great surprise to the trade. It had been thought that the Federal Farm Board's authorized loan value of 16c. on middling $\frac{7}{8}$ in. had practically pegged the contract market around 17c., and it did not seem possible that there would be any decline of importance below that level. Mills were disposed to accept a 16c. level as a good basis on which to fix cotton, and heavy calling occurred, which came to a complete halt when the market broke below 16c. Extreme price weakness has now disappeared; at times the market has shown a good rallying power, and it is believed that there are influences which will eventually bring about a more active and higher market.

The outlook at the moment is less reassuring. Cotton has lost two-thirds of its rally from the low point of the year. The trade is not taking cotton freely, and exports continue to decrease. Interest is centered largely on new crop prospects and possible decisive action by the Farm Board. Low prices now current will automatically decrease acreage planted very considerably, an effect which is greatly desired by the Farm Board.

New Bedford District—In the New Bedford district there has been fair buying of extra staples. Sales are not large but numerous. Activity is seen on $1\frac{7}{16}$- and $1\frac{1}{8}$-in. cotton with a moderate demand for strict low to middling one-inch cotton. Not much is being done with Sak. and Egyptian Uppers; quotations are nominal and stocks normal. In the Alexandria market the fall in New York has not been reflected to any large degree on near months owing to government limits. The disparity between Egyptian and American cotton is more accentuated. The Egyptian government has not yet indicated price limits on May cotton. The India cotton crop for 1929-30 is estimated at 4,630,000 bales. Acreage planted this season shows a decrease of 753,000 acres.

Domestic Wool in Better Shape

Stocks Are Running Low— More Activity in Contracting Field

BOSTON.

THE Boston wool market is in better shape than it was at the beginning of the year. Although the price level is lower than it was at that time, it is much firmer, and during the period large quantities of wool have been taken out of the market. Topmaking interests have figured conspicuously, and have been large purchasers of the finer grades around the low prices of the year.

Mills continue to be interested in the finer qualities of domestic wool, and it is expected that a larger demand for the relatively small amount of $\frac{1}{2}$ blood wool available will be seen in the near future, inasmuch as a number of mills are talking about the construction of fabrics from $\frac{1}{2}$-blood instead of from fine wool. There has been a steady drain during the last two weeks on the domestic wool supply of Summer Street, and when and if the Boston Wool Trade inventory is taken, quite limited stocks of domestic wool are likely to be shown. There is no reason to suppose that the mills are carrying any large stocks of any type. The government report as of Dec. 31 showed that mill stocks were at the lowest point for the previous eight years.

Dealers Interested in Contracting—The chief interest of the wool district lies in the contracting field. Strenuous efforts are being made both by the National Pool and by the Summer Street houses which have handled the bulk of the domestic clip for many years to tie up the grower. The situation, from the wool merchant's standpoint, has changed a little for the better. It has become evident that there will be plenty of wool available for Summer Street contractors and that the big pool may not aggregate a larger holding than the general total usually controlled by the several local and state associations throughout

When service is imperative...

due to market changes

When Fashion says, "Make it this way," how soon can your mechanical equipment be ready to meet the changing demand? Are you off with the leaders or back with the tail-enders?

Since the first of this year we have received more than 500 orders for major attachments for the Reading Full-Fashioned Knitting Machine. To date, *more than 80% of these orders have been delivered and installed*

The secret of the ease and dispatch with which "Reading" machines can be equipped to meet market changes lies in their *standardization.* When our service men arrive at your mill with the attachments ordered they know what is to be done and how to do it. There is no "rebuilding," no special machine work necessary to adapt the attachment to your machines. Production is interrupted for only a few hours—not weeks or months—before your mill is turning out the advanced styles that bring top price.

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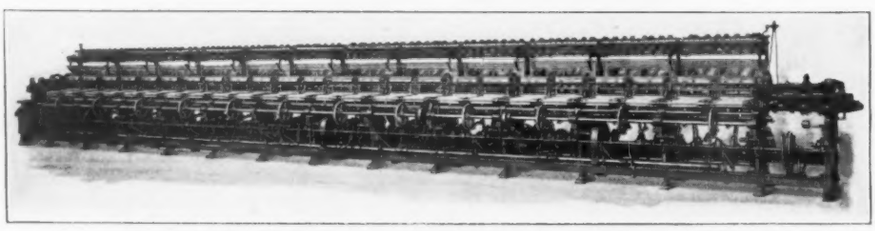


No one appreciates the standardized design of Reading Full-Fashioned Machines more than the mill-owner who has stood by with idle or obsolete machines while his competitors worked at capacity to meet the new demand.

total usually controlled by the several local and state associations throughout the country. It is even anticipated that the wool pool may assist the trade by the stabilization of prices.

Unsold Wools Accumulate—Unsold wools are piling up in the various primary markets, and not for a number of years has there been such a bulk of unsold wool in Australia, New Zealand, and South America at this time of the year. More than half the South American clip was unsold on March 1, whereas usually at least 90% has been taken by that date. The disturbance in the South American peso has been one of the factors bringing about instability of prices in Argentina. During the last day or two the Argentine peso has had another drop, and as the peso drops commodities rise, and vice versa. Boston houses are in communication with Buenos Aires, but the cable bids have been too low to be acceptable. The market has recently become more active, England and the Continent buying more freely.

Japan May Store Silk

Report of Proposed Step Strengthens Market Here

REPORTS from Yokohama to the effect that the Japanese government was considering plans to strengthen the raw-silk market brought a sharp firming in the Orient which was immediately reflected in a gain in raws in New York. The reports were lacking in detail; it was understood, however, that the Japanese government had in mind as one way to help the market, the withdrawal of surplus stocks of raw silk which would be placed in storage, pending the stabilization of prices.

This development came suddenly on Tuesday, after some days of unrelieved weakness. The market was soft over the week-end, and neither hosiery knitters nor broadsilk weavers showed any real interest. Tuesday's report stopped the decline in prices; prior to that, quotations had gone down 10c.

Awaited Confirmation—There was no resulting rise, as the market was awaiting confirmation of news from Japan, but the tone was decidedly stronger. Broadsilk mills bought small quantities for immediate use; these firms indicated a readiness to cover quickly, in event the intercession of the Japanese government was authenticated. Wednesday opened strong, prices gaining, sometimes as much as 15c. Raw silk importers were not disposed to be too optimistic on the outlook. They, like their customers, were waiting word from Japan.

Hosiery Knitters' Creditors Hit—An indefinite number of raw-silk firms were believed to be affected by the weak condition of the full-fashioned silk hosiery trade. These firms have hosiery manufacturers on their books for heavy indebtedness, with little likelihood of early collections. The knitters themselves admitted that their finances were in bad shape, and they were asking extensions of credit; in one instance, an extension of five years was asked. The situation was so acute that there was talk of raw-silk firms finding themselves in possession of hosiery mills before long—a contingency which they do not relish.

On the Silk Exchange—The week started soft, with active trading; futures firmed slightly. Prices in Japan on Feb. 27 dropped to the lowest levels since 1915. The market was spotty next day with futures in irregular demand. March 1 and 3 marked a continuation of current weakness, with prices tending downward; considerable "bargain" buying was manifest. Next day, March 4, brought the news of Japan's reported plan for strengthening the market by storing silk surplus stocks, and the Exchange reacted with a prompt firming.

◆ Overproduction Weakens Polo Shirts

THE widely heralded boom in polo shirts which some manufacturers had predicted would prove an outstanding feature of the 1930 outerwear season, may be considerably less profitable than had been expected. Worth Street agents of mills producing quality polos complained this week that their demand has been hit by overproduction of inferior-grade garments; these cheap poles, it was stated, are selling at rock-bottom prices, and in some instances cut-throat competition exists.

One sales executive told of a customer who had placed a substantial order for high-grade polo shirts to sell at a good figure; shortly after placing his contract the customer ordered it cancelled. He explained that "the market is being flooded with cheap merchandise" of this type, and he was afraid he would not be able to sell the goods. This situation is not general, but it has caused some concern among knitters.

Other ends of the sweater trade were firm, with heavyweights moving spottily. Some producers reported a good future call for the fall lines.

Bathing-suit movement held steady. Demand was less hectic than hitherto, but orders came in at a good pace.

New Hosiery Price Cut

Stabilization Is Hope of Mills Making 25-50c. Reduction

REDUCTIONS running from 25c. per dozen to 50c. per dozen on women's full-fashioned silk hosiery which were put into effect this week by two leading hosiery mills, raised the question in the market as to what other mills, among the larger producers, would follow suit. The first answer to that query came in the form of a statement from another outstanding company announcing that no new reductions would be made. It is known that at least one more of the leading mills will hold to present quotations. The cut was recognized as a move toward stabilization of full-fashioned prices. The persistent weakness in this field for the last six weeks registered most strongly among the small mills, but it had a softening effect all along the line.

It is still too early to gage the result of the reduction. At present, women's full-fashioned silk hosiery is in a slightly better position. Buyers are less belligerent and more inclined to buy at reasonable figures, but, as one full-fashioned sales manager put it, "we are not yet out of the woods." The recent clearance of large quantities of full-fashioned at bargain prices has had a healthy reaction, and knitters are more hopeful than they were. However, no real strength is expected to develop now for some weeks.

Half-hose continued quiet, with weakness manifest at the fancies end. Jobbers reported a fair call for the low-price lines, especially numbers retailing at 25c.; cotton fancies in lively patterns were in demand. Buyers emphasized price, and registered little response to attractive styling, if the price was higher. Factors commented that $1.50 numbers which were a particularly good buy, from the point of style, frequently were passed over in favor of $1.35 numbers which actually did not offer equal value.

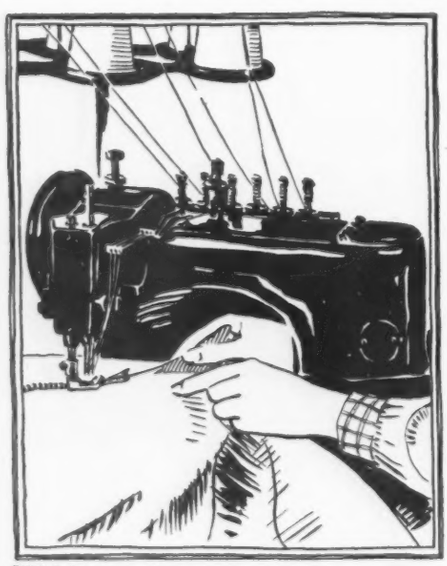
Easter Prospects Dubious—The uncertainty throughout the hosiery trade has made knitters doubtful regarding Easter which season normally brings a spirited demand. One particularly discouraging feature is that anklets are moving very slowly. This time last year, anklets were in active demand, and the call continued at a good pace right into the warm weather. Some sales executives were skeptical as to whether the anklet vogue will go over as big this year as it did in 1929; anklets are backward, but a good pick-up in April could easily balance up for the slow start.

An IMPROVED PRODUCT at lower cost

—A combination that interests every manufacturer

IN making overalls, the operation of attaching bib to body of the garment doesn't seem to offer much chance for improvement. But Union Special engineers, cooperating with a maker of high grade work garments, have managed to clip the cost and get a more saleable product at the same time.

Union Special Class 16800, a six-needle machine, attaches the bib to the body of overalls in one operation, producing two three-needle seams. The work is perfectly smooth and even, without puckering formerly found in this work. The double locked stitch is stronger, making the garment wear better as well as look better. The six-needle seam matches the three-needle seams used at other points on the garment. Class 16800 machines eliminate one operation, cutting the cost of production correspondingly.



TW3-8-Gray

You don't have to make work garments to take advantage of the superiority of Union Special machines. Our engineers can give you equipment to meet any requirements of industrial sewing. Write for full information.

See also CONSOLIDATED TEXTILE CATALOG

UNION SPECIAL MACHINE CO.

Makers of Special Sewing Machines for all Manufacturing Purposes

400 North Franklin Street, Chicago

◆Heavy Underwear Demand Spotty

HEAVYWEIGHT underwear sold spottily; most of the mills had difficulty in getting business, but a few big operators were doing well. Both spot and future orders were being placed. Generally, the tone of the heavyweight market was hesitant. Buyers were averse to committing themselves for fall requirements; turnover was decidedly behind that of this time last year, and knitters were uncertain as to when they might look for improvement. It was felt that March will be quiet throughout with the possibility of a pick-up in April.

Balbriggans, nainsooks and rayons were moving steadily. Balbriggans were in demand for spot delivery, and numerous good-sized orders were placed. Prices held firm and knitters reported a confident tone in the market.

◆Openings Reflect Low Wool

CERTAIN wool goods sellers told of doing a fair amount of fall business last week, but the general market was quiet, pending a digest of the formal openings which took place Wednesday of this week. During the pre-opening period there was a slight increase in spot purchasing, probably as a result of the number of out-of-town buyers.

American Woolen Co.—No information was available at the offices of the big company regarding fall prices. It was understood from outside sources, however, that new prices on mixture suitings in Dept. 1 are lower on an average of 10 to 12½c. per yd. This is on a basis comparable to the recent revision of staples. Fancy worsted suitings were understood to be 17½ to 25c. less than last year; these figures also coming from unofficial sources.

Flannels—Flannels from both the Talbot Mills and Russell Mfg. Co. show reductions of 7½c. from last spring. A comparative fabric from the American was believed to share a similar reduction.

Staples—Following the lead of the American Woolen Co., other leading manufacturers of staples, who had joined with the big company in attempting to hold the market, revised fall prices downward. This action puts factors in this branch of the market on a comparative basis.

Samuel Hird & Sons—This house stated that their prices on all lines for fall 1930 show a reduction of 32½c. from last fall or a decline of 25c. from spring. The company further stated that these new prices reflected the extreme decline of raw wool and would prove most attractive to customers.

Cotton Goods Buying Sluggish

Decline of Silver Adds To Exporting Difficulties

EXPERIENCES in last week's cotton goods market closely paralleled those of the preceding two weeks. Goods buying continued slow, and cotton tended downward. The opening of the current week marked the third successive Monday that the staple declined, and this was carried over into the succeeding day.

Exports—The further decline in the silver market is viewed with trepidation by exporters. A high percentage of the world's currency is on a silver basis, and depreciation in this commodity tends to increase the cost of American goods to foreign consumers. Merchants are particularly anxious as to the effect on Oriental markets.

Print Cloths—Toward the close of last week, print cloth trading was confined to small lot transactions with 80-square, 4.00-yd. goods as volume leaders. At times this construction could be had for May-June at 8⅛c. which quotation became more general early in the current week after a consistent decline in cotton. Later deliveries of the number could be had at 8¼c. For a time the 5.35 yd. showed a slight price improvement and several centers held for 6⅛ to 6¼c. By the middle of this week, however, 6¼c. was once more the general figure. After cotton slid off there were reports of second-hand offerings of 5.35s at 6⅛c.

Sheetings—Interest in sheetings was scant with a negligible amount of support from the bag trade.

Sheets and Pillow Cases—The downward revision of list prices of sheets and pillow cases came as a surprise to many who had expected new figures to be approximately the same. This market was divided within itself as to the advisability of holding prices for another month, but those on the side of immediate action won out. The new prices, which show a greater parity to prevailing costs of raw cotton, are expected to bring results rapidly. Before this action, many buyers had expressed an interest in merchandise, but showed an unwillingness to purchase at what they considered high levels.

Shantungs in Active Call

Demand So Steady, Mills Have Little Goods on Hand

DEMAND from cutters for broadsilks continued to stress large-pattern chiffon florals and shantungs. Shantungs were particularly active, and ordering was so steady that practically no goods remained long on hand; so far, the mills have been able to fill shantung contracts without asking time, but there were indications that a continuation of the present call would mean that some customers might have to wait. Manufacturers of ready-to-wear were pushing their output of sport suits made of shantung for which they expect a good early summer call.

Wide Interest in Shantungs—Shantungs are uniquely in the forefront of broadsilk and cutter interest. These fabrics are selling spiritedly for suits and dresses, and the latest word from Paris is that shantungs are going into evening dresses. Several new Paris-designed evening dresses of shantung were displayed in New York this week, and excited much attention; there was considerable discussion as to the prospects for shantung in the formal wear field.

Velvets for Wraps — Lightweight velvets were in mild but steady call for spring and summer wrap manufacture. The larger mills reported a sustained demand for these piles.

Chiffons, Flat Crepes, Taffetas—Chiffons both prints and plains sold spiritedly all week, demand leaning to pastel greens and blue; the blues are increasing in importance, and the present wide range of blue shades from light to navy are moving actively. Some chiffon numbers were short, but as a rule, buyers had no difficulty in getting the popular designs.

Chiffon Prices Firm—Recent weakness in chiffon prices is confined to low-grade fabrics, according to authoritative sources. Medium and high-quality chiffons, especially prints, are selling steadily at list prices, and mills show no disposition to cut. Sales executives found some pressure at the buying end for reductions, but few concessions were made. One factor cited a strong demand for $1.75 chiffon prints for evening dresses; he said these prints sell fast enough on their own quality.

QUOTATIONS

at close of business, March 5, 1930
Prices cover average qualities unless otherwise stated

Cotton Goods

	Mar. 5	Feb. 26	Mar. 6 1929
PRINT CLOTHS			
27 -in., 64x60, 7.60	4¼c.	4¼–4½c.	5½–5¾c.
38½-in., 64x60, 5.35	6½c.	6½–6¾c.	7⅛–7¼c.
39 -in., 68x72, 4.75	7½–7¾c.	7½–7¾c.	8¼c.
39 -in., 72x76, 4.25	8¼–8½c.	8½c.	9¾–9¾c.
39 -in., 80x80, 4.00	8¼–8¾c.	9c.	10¼–10½c.
BROWN SHEETINGS			
36-in., 56x60, 4.00	7¼c.	7¾c.	8¼c.
36-in., 48x48, 3.00	9¼c.	9¼c.	10¾–10½c.
37-in., 48x48, 4.00	6¼c.	7c.	8¼– 8¼c.
PAJAMA CHECKS			
36½-in., 72x80, 4.70	7½–7¾c.	7¾–7¾c.	8½c.
36½-in., 64x60, 5.75	6¼c.	6¼c.	7¼c.
MISCELLANEOUS			
Drills, 37-in., 3 yd.	9¼c.	9¾c.	11¼c.
Denims, 2.20	15c.	15 c.	17 c.
Tickings, 8 oz.	19½c.	19½c.	21½–23c.
Standard prints	9¼c.	9¼c.	9c.
Eastern staple ginghams, 27-in.	10c.	10c.	10½c.

Cotton Waste

Peeler comber	13 —13½
Peeler stripe	11 —11½
Sak. comber	11½—12
Choice willowed fly	6 — 6½
Choice willowed picked	5 — 5½
Sak. strips	14 —15
Linters (mill run)	3½— 4
White spooler (single)	8½— 9

Cotton Yarn

CARDED—(Average Quality)
Double carded 2c.–4c. higher according to quality

SINGLE SKEINS OR TUBES—(Warp Twist)

4s to 8s	$0.26½–0.27	20s	$0.29½–0.30
10s	.27 – .27½	24s	.31½– .32
12s	.27½– .28	26s	– .32½
14s	.28 – .28½	30s	.34½– .35
16s	.28½– .29	40s ex.qual.	.46½– .48

TWO-PLY SKEINS AND TUBES

8s-2	$0.26½	26s-2	$0.34
10s-2	– .27	30s-2	– .35
12s-2	– .27½	36s-2	.40– .42
14s-2	– .28½	40s-2	.43– .44
16s-2	– .29	40s-2 hi b'k	.47– .49
20s-2	.30 – .30½	50s-2	– .52
24s-2	– .33	60s-2	– .60

SINGLE WARPS

10s	$0.27 –0.27½	24s	$0.32
12s	.27½– .28	26s	– .33
14s	.28 – .28½	30s	– .36
16s	.28½– .29	40s ex.qual.	.48½– .49
20s	.29½– .30		

TWO-PLY WARPS

8s-2	$0.27 –0.27½	24s-2	$0.33 –0.34
10s-2	.27½– .28	26s-2	– .34½
12s-2	.28 – .28½	30s-2	.35 – .35½
14s-2	.28½– .29	40s-2 ordin.	.43 – .44
16s-2	– .29½	50s-2	– .52
20s-2	.30½– .31	60s-2	– .60

8s-2 and 4-ply skeins and tubes; tinged, .24; white .26; waste .22

HOSIERY CONES (Frame Spun)

8s	$0.25½	22s	$0.29½
10s	.25½– .26	24s	.30½– .31
12s	.26 – .26½	26s	.31½– .32½
14s	.26½– .27	30s tying	.33 – .33½
16s	.27 – .27½	30s reg.	.34½– .35
18s	.27½– .28	30s ex.qual.	.35½– .36
20s	.28½– .29	40s	– .42

COMBED PEELER—(Average Quality)
WARPS, SKEINS AND CONES

	Merc. Tw.	Wp. Tw.		Merc. Tw.	Wp. Tw.
20s-2	$0.43	.44	60s-2	$0.63	.64
30s-2	.49	.50	70s-2	.73	.74
36s-2	.50	.51	80s-2	.85	.86
40s-2	.51	.52	90s-2	1.02	1.08
50s-2	.56	.57	100s-2	1.29	1.33

SINGLES

12s	$0.36½	30s	$0.46 –0.47
14s	– .37	38s	49 – .49½
16s	– .37½	40s	.50 – .51
18s	– .38	50s	.54½– .55½
20s	– .39	60s	.62 – .63
24s	– .41½	70s	.72 – .73
28s	– .44½	80s	.84 – .85

MERCERIZED CONES—(Combed, Ungassed)

26s-2	$0.62 –0.64	90s-2	$1.45 –1.50
30s-2	.63 – .65	100s-2	1.75 –1.80
36s-2	.66 – .67	120s-2	2.15 –2.20
40s-2	.68 – .70	30s	.77 – .80
45s-2	.71 – .73	40s	.82 – .84
50s-2	.73 – .75	50s	.87 – .90
60s-2	.82 – .85	60s	.94 – .99
70s-2	.97 –1.00	70s	1.10 –1.15
80s-2	1.09 –1.12	80s	1.32 –1.37

COMBED REVERSE TWIST THREAD YARNS
(Skeins, Tubes or Cones, 2, 3 and 4-Ply)

	Peeler Average	Peeler Best	Sakelarides Average	Sakelarides Best
24s	$0.49	$0.58–0.59	$0.69	$0.74
30s	.52	.61– .62	.72	.77
36s	.54	.63– .64	.75	.80
40s	.59	.67– .68	.79	.84
45s	.64	.72– .73	.84	.89
50s	.69	.77– .78	.89	.94
60s	.79	.87– .88	.99	1.04

Cotton Prices and Statistics

FLUCTUATIONS OF FUTURES

	Closed Feb. 27	For High	Week— Low	Closed Mar. 5	Net Change
March	15.22	15.25	14.52	14.52	—.70
April	15.37	15.37	14.61	14.61	—.76
May	15.53	15.59	14.74	14.77	—.76
June	15.64	15.64	14.87	14.87	—.77
July	15.79	15.85	14.98	15.00	—.79
August	15.82	15.82	15.04	15.04	—.78
September	15.87	15.87	15.08	15.08	—.79
October	15.98	16.02	15.14	15.15	—.83
November	16.02	16.06	15.29	15.29	—.73
December	16.14	16.22	15.38	15.40	—.74
January	16.18	16.22	15.45	15.45	—.73

MIDDLING SPOT FLUCTUATIONS FOR WEEK

	New York	New Orleans	Liverpool
Friday, Feb. 28	15.30	15.16	8.49
Saturday, March 1	15.10	14.96	8.51
Monday, March 3	15.00	14.81	8.38
Tuesday, March 4	14.90	Holiday	8.33
Wednesday, March 5	14.60	14.41	8.28
Thursday, March 6	14.50	14.37	8.14

SPOT FLUCTUATIONS AND STOCKS

Market	Feb. 26	Mar. 5	Sales	Stocks This Week	Stocks Last Year
Galveston	15.35	14.90	3,160	348,619	448,619
New Orl'ns	14.98	14.41	5,163	466,215	336,035
Mobile	14.70	14.20	546	34,575	31,383
Savannah	14.83	14.32	.....	58,244	41,099
Norfolk	15.25	14.81	2,176	61,506	92,198
New York	15.15	14.60	650	98,503	88,336
Augusta	15.25	14.69	752	90,187	77,151
Memphis	14.55	14.00	10,420	387,062	242,539
St. Louis	14.25	14.25	.....	13,524	24,814
Houston	15.25	14.70	8,072	942,324	764,871
Dallas	14.80	14.25	5,454	.....	.....

BASIS MIDDLING

	Saturday Mar. 1	Saturday Feb. 22
10 markets average	14.90	14.96
Memphis	14.55	14.75

PREMIUM STAPLES

First Sales from Factors Tables at Memphis

Grade Strict Middling	Prices Nominal
1⅛-in	18.30 – 18.65c.
1 3/16-in	19.50 – 19.90c.
1¼-in	23.25 – 23.75c.

CURRENT SALES

	For Week	Prev. Week	Week Before
Memphis total	12,017	10,524	20,112
F.o.b. included in total	10,355	9,633	15,241
10 markets	37,809	48,414	56,056

MEMPHIS RECEIPTS, SHIPMENTS, ETC.

	For Week	Last Year	Year Before
Net receipts	15,980	17,094	15,684
Gross receipts	33,148	37,626	30,638
Total since Aug. 1, net	852,868	735,930	572,793
Shipments	33,469	42,956	20,274
Total since Aug. 1	1,333,228	1,304,092	1,098,165
Total stock	395,220	251,506	236,024
Decrease for week	321	4,970	*364
Unsold stock in hands of Memphis factors	54,233	.....	.....
Increase for week	3,836	.....	.....

*Increase.

AVERAGE PRICE MARCH-APRIL SHIPMENT HARD WESTERN COTTON

	Middling	St. Middling
1 1/16 in	18 –18½c.	18½–19½c.
1⅛ in	19 –19½c.	20 –20½c.
1 3/16 in	20½–21½c.	21½–22½
1¼ in	24 –25c.	26 –27c.

Basis on New York, May, 14.77c.

DIFFERENCES ON AND OFF MIDDLING
WHITE GRADES

	Dallas	Memphis	Montgomery	Augusta	Average
M. F	1.05†	.90†	1.00†	1.25†	1.07†
S. G. M	.90†	.65†	.90†	1.00†	.89†
G. M	.75†	.50†	.75†	.75†	.72†
S. M	.50†	.35†	.50†	.50†	.50†
S. L. M	.75*	.75*	.85*	.75*	.75*
L. M	1.75*	1.50*	1.75*	2.00*	1.70*
S. G. O.**	3.00*	2.50*	2.75*	3.25*	2.80*
G. O	4.00*	3.50*	3.75*	4.25*	3.78*
YELLOW TINGED					
G. M	.50*	.50*	.50*	.50*	.50*
S. M	1.00*	1.00*	1.00*	1.00*	1.00*
M.**	1.75*	1.50*	1.50*	1.50*	1.60*
S. L M.**	2.50*	2.00*	2.25*	2.25*	2.27*
L. M.**	3.25*	3.00*	3.00*	3.00*	3.15*
YELLOW STAINED					
G. M	1.50*	1.50*	1.50*	1.50*	1.50*
S. M.**	2.25*	2.25*	2.50*	2.50*	2.35*
M.**	3.00*	2.75*	3.50*	3.50*	3.15
BLUE STAINED					
M. G.**	1.75*	1.25*	1.75*	1.75*	1.65*
S. M.**	2.25*	2.00*	2.75*	2.75*	2.40*
M.**	3.00*	2.50*	3.75*	3.75*	3.18*

**Grades not deliverable on contract. †On Middling. *Off Middling.

EGYPTIAN COTTON

March-April Shipment c.i.f.	Boston	Change
Fully good fair Sak	29.80	.....
Fully good fair to good uppers	22.00	—0.05

(By John Malloch & Co.)

Alexandria Exchange, Mar. 5		
March Sak	27.50	.....
April uppers	19.42	—0.01

Wool

OHIO, PENNSYLVANIA AND WEST VIRGINIA

Fine delne	$0.33 –$0.34	¾ blood	$0.36 –$0.37
Fine clthg	.24 – .25	¼ blood	.36 – .37
½ blood	.35 – .36		

TEXAS AND CALIFORNIA

Texas, 12 months	$0.75 –$0.78
California, Northern	.70 – .72

PULLED—EASTERN (SCOURED BASIS)

A-A	$0.83 –$0.85	B-Super	$0.65 –$0.70
A-Super	.75 – .78	C-Super	.58 – .60

MONTANA, IDAHO AND WYOMING (SCOURED BASIS)

Staple fine	$0.78 –$0.80
Staple ¾ bld	.76 – .78
Fine and fine medium	.73 – .75
¾ bld. blood	.68 – .70
½ blood	.65 – .67

MOHAIR—DOMESTIC

Best carding	$0.40 –$0.43
Best combing	.57 – .60

MOHAIR FOREIGN (IN BOND)

Turkey fair, average	$0.35 –$0.38
Cape firsts	.35 – .38

FOREIGN CLOTHING AND COMBING (IN BOND)

Australia:	
70s	$0.71 –$0.73
64s	.58 – .60
58s-60s	.51 – .53
Montevideo:	
58-60s	$0.25 –$0.26
56s	.25 – .26
50s	.24 – .25
Buenos Aires:	
4s, 40-44s	$0.21 –$0.22
5s, 36-40s	.18 – .19

FOREIGN CARPET (GREASE BASIS IN BOND)

China: Combing No. 1	$0.23 –$0.24
China Filling Fleece	.22 – .24
Szechuen ass't	.23 – .24
Cordova	.20 – .22
Scotch black face	.23 – .24
East India: Kandahar	.32 – .34
Vican'r	.37 – .39
Joria	.37 – .39
Aleppo	.35 – .36

Worsted Yarns

ENGLISH SYSTEM WEAVING

2-20s, 36s	$1.00 – 1.05
2-24s, 40s	1.10 – 1.15
2-26s, 44s	1.20 – 1.25
2-28s, 46s	1.22½ – 1.27½
2-30s, 48s	1.32½ – 1.37½
2-32s, 50s	1.35 – 1.37½

(Single yarns 5c. less than above)

2-36s, 58s	1.52½ – 1.55
2-40s, 60s	1.57½ – 1.60
2-40s, 64s	1.60 – 1.62½
2-50s, 66s	1.82½ – 1.87½
2-60s, 70s	2.30 – 2.35

ENGLISH SYSTEM KNITTING

2-20s, 44s in oil	$1.10 –$1.15
2-20s, 50s in oil	– 1.22½
2-20s, 56s in oil	1.37½ – 1.40
2-20s, 60s in oil	1.52½ – 1.55
2-20s, 64s in oil	1.57½ – 1.60
1-15s, 46s dyed	1.30 – 1.32½
1-15s, 48s dyed	1.32½ – 1.35
1-15s, 50s dyed	1.35 – 1.37½

FRENCH SYSTEM

1—20s, 58s	$1.35 –$1.40
1—20s, 60s	1.40 – 1.45
1—26s, 64s	1.45 – 1.47½
1—30s, 60s . . Warp	1.55 – 1.57½
1—30s, 64s . . Warp	1.60 – 1.62½
2—30s, 64s . . Fancy mixes	1.80 – 1.85
2—40s, 64s . . Zephyrs	1.75 – 1.77½
1—50s, 66s	1.75 – 1.80
2—50s, 66s	1.87½ – 1.90
1—60s, 70s	2.17½ – 2.22½
2—60s, 70s	2.32½ – 2.37½

FRENCH SPUN MERINO WHITE

1-30s, 50-50-58s on cops	$1.15 –$1.17½
1-40s, 50-50-60s on cops	1.30 – 1.32½
1-40s, 50-50-64s on cops	1.32½ – 1.35
1-40s, 50-50-64s Australian cops	1.35 – 1.40

Underwear mixes, 3c. additional
Solid color, 35c. additional.

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Tops and Noils

TOPS—BOSTON

Fine (64-66s)	$1.00 –$1.05
Half-blood (60-62s)	1.00 – 1.03
High ¾ blood (58s)	.92 – .95
Aver. ¾ blood (56s)	.90 – .92
Low ¾ blood	.85 – .87
High ¼ blood (50s)	.80 – .85
48s N. Z.	.76 – .78
46s S. A. and N. Z.	.73 – .75
44s S. A. and N. Z.	.68 – .70
40s S. A. and N. Z.	.65 – .68
36s S. A. and N. Z.	.65 – .68

TOPS—BRADFORD, ENG. (FEB. 20)

Fine (70s)	32d	¾ bld. (56s)	22 d
Fine (64s)	29d	½ bld. (50s)	18½d
½ bld. (60s)	27d	Cross-bred (46s)	15½d
¾ bld. low (58s)	25d		

NOILS—BOSTON

Fine	$0.52–$0.55	High ½ bld.	$0.41–$0.43
Half-bld	.48– .50	Low noils	.35– .38
Aver. ¾ bld.	.44– .46	Medium colored	.30– .35
Fine colored	.35– .40		

Wool Substitutes

WOOL WASTE

Lap, fine white	$0.78 –$0.85
Lap, fine colored	.60 – .65
Hard ends, fine white	.63 – .65
Hard ends, ½ blood white	.43 – .45
Hard ends, fine colored	.35 – .38
Hard ends, medium colored	.25 – .30
Card, fine White	.30 – .40
Burr, fine Carbonising	.35 – .45

OLD WOOLEN RAGS (GRADED FOR MFRS.)

Merinos, Coarse Light	$0.06½ –$0.07
Merinos, Fine Dark	.05 – .05½
Merinos, Fine Light	.15 – .16
Serges, Blue	.09 – .09½
Serges, Black	.08½ – .09
Serges, Red	.11½ – .12½
Knit, White	.34 – .35
Knit, Red	.18 – .19
Knit, Light Hoods	.17½ – .18½
Worsted, Light	.06 – .07
Worsted, Blue	.09 – .09½
Worsted, Black	.08 – .08

Silk Yarns

THROWN SILK (60 day basis)

Japan organzine, 2 thd. grand XX in skeins	$5.95
Japan organzine, 2 thd. sp. crack in skeins	5.65
Japan crepe, 3 thd. grand XX in bobbins	6.05
Japan crepe, 3 thd. sp. crack on bobbins	5.70
Japan crepe, 4 thd. crack on bobbins	5.65
Canton crepe, 3 & 4 thd. ns. 14/16 on bobbins	3.65
Tussah tram, 2 end on cops	2.35
Hosiery tram, 3 thd. Japan XXX	6.40
Hosiery tram, 5 thd. Japan G XX	5.70
Hosiery tram, sp. crack XX	5.30
Hosiery tram, crack XX	5.20
Hosiery tram, XX	5.10

SPUN SILK YARNS—(Terms: net 30)

40/2	$4.25	60/2	$4.55
50/2	4.40	62/1	3.50

Raw Silk

(60 day basis)

Japan filature, grand XX, 13/15	$5.00
Japan filature, sp crack XX, 13/15	4.80
Japan filature, crack XX, 13/15	4.60
Japan filature, XX, 13/15	4.55
Japan filature, best X, 13/15	4.45
Japan filature, X, 13/15	4.35
Canton filature, new style, 14/16	2.65
Canton filature, new style 20/22	2.55
Tussah filature, 8 cocoon	1.70
Grand XX (Yellow) 20/22	4.60
Grand XX (White) 20/22	4.55
Sp. crack (Yellow) 20/22	4.55
Sp. crack (White) 20/22	4.55
Crack (Yellow) 20/22	4.55
Crack (White) 20/22	4.45

NATIONAL RAW SILK EXCHANGE

	Close Feb. 26	For the Week High	For the Week Low	Close Mar. 4	Net Chg.
March	4.31	4.32	4.18	4.30	—.01
April	4.30	4.40	4.14	4.34	+.04
May	4.31	4.41	4.13	4.33	+.02
June	4.31	4.36	4.11	4.30	—.01
July	4.25	4.36	4.10	4.25	.....
August	4.27	4.27	4.10	4.25	—.02
September	4.26	4.27	4.13	4.25	—.01
October	4.27	4.27	4.09	4.25	—.02

Feb. 26 to Mar. 4—Total contracts, 1,528. Total number of bales 15,280. Total approximate value $9,168,000.

Domestic Rayon

VISCOSE PROCESS

Denier	Filament	First Quality	Second Quality
75	18	$2.35	$1.65
75	30	2.45	1.75
100	18	1.95	1.60
100	40	2.00	1.65
125	18	1.45	1.25
125	36	1.50	1.30
150	24–32	1.15	1.10
150	36	1.20	1.15
150	60	1.35	1.30
150	75	1.50	.....
170	24–27	1.15	1.10
170	60	1.35	1.30
200	30–32	1.10	1.05
200	60	1.30	1.25
300	40–60	1.00	.95
400	72	1.10	.95
450	54	1.00	.95
600	72–96	1.00	.95
900	100–144	1.00	.95

NITRO-CELLULOSE PROCESS

Denier	First Qual.	Second Qual.	Denier	First Qual.	Second Qual.
35	$3.50	$3.25	125	$1.45	$1.25
50	2.75	2.50	140	1.15	1.10
75	2.35	1.65	150	1.15	1.10
100	1.95	1.60	160	1.15	1.10
			175	1.15	1.10

CUPRAMMONIUM PROCESS

Denier	Filament	Price	Denier	Filament	Price
15	25	$4.15	40	30	$3.15
25	25	3.65	52	30	3.00
30	25	3.40			

(Due to diversified offerings prices for higher denier are not listed.)

ACETATE PROCESS

Denier	Price	Denier	Price
45	$2.75	120	$1.90
55	2.55	150	1.60–1.85
75	2.25–2.70	200	1.55
100	2.00–2.45	300	1.50

Rayon Waste

Open bleached waste	$0.30
Open unbleached waste	$0.24 – .26
Bleached thread waste (mfs.)	..... .15
Bleached thread waste (misc.)	..... .11
Colored thread waste	.08 – .10
Colored clips	..... .12

CONVERTED RAYON WASTE

Bleached tops	$0.59 –$0.60
Unbleached tops	.51 – .52
Bleached noils	..... .22
Bleached garnets	.23 – .25
Unbleached garnets	.21 – .23
Colored garnets	.16 – .20

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Research in Textile Oils

(Continued from page 41)

Catechol, pyrogallol and other compounds having similar properties, is not, in the writer's opinion, suitable for textile oils, because at some stage of the process, either in the presence of soap to form a spraying emulsion, or at the final step of washing out, it comes into contact with an alkali. Here an alkaline oxidation reaction occurs wherein these types are converted into colored compounds.

Other compounds have the peculiarity of undergoing a change that results in discoloring light-colored distilled oleic acid. All primary amines studied as antioxidants caused light-colored oils to turn some shade of red, or occasionally brown. The speed with which this change takes places varies greatly. Alpha-naphthylamine and paratoluidine will develop a stain in an hour or so, while beta-naphthylamine does not cause a noticeable change before two or more days. The secondary amine, diphenylamine, discolors pale yellow oleic acid very slightly. Phenolic bodies suitable for antioxidants have but little effect upon the color of the oil, and are therefore quite generally applicable. While good antioxidants have been found, the search continues for better ones.

Stabilized red oil for textile oil purposes has been studied from every angle and there is no doubt now that a properly treated oil is superior to any other oil for similar purposes. A stabilized oil will retain its original properties over indefinite periods so that the last barrel will have the same, fine qualities as the first barrel of a shipment, and age will not cause appreciable change in its viscosity. Observations have proved that fiber oiled with stabilized oleic acid retains its smoothness and is free from objectionable odor and gumminess after several months of storage.

In regard to reduction in oxidation, a stabilized oil can be made almost ideal, as shown by the curves in Fig. 8, wherein the two compounds alpha-naphthol and diphenylamine alone are considered.

Red oils, or the various grades of technical oleic acids, possess valuable commercial possibilities. Since this commodity is a domestic product, requests for special grades of these oils can be readily and cheaply supplied by the manufacturers. It is commercially practical to produce these textile oils with reasonable variations in viscosity to suit the different requirements of the textile mill. For example, relatively light-bodied oils may be had for combing shoddy and weak fibers, where breakage on account of too heavy oil causes serious waste, or a heavier-bodied oil may be had for drawing operations intended for firm yarns from strong fiber. Proper red oils thus permit a wide flexibility in plant operations. Much of the difficulty with textile oils experienced by operators has come from buying an oil at a price without taking care to buy it upon specification. Added to the general adaptability of technical oleic acids to textile purposes, the user now has complete assurance against gumming and against all but the remotest possibility of spontaneous combustion, possible through the availability of stabilized red oils, and he can be confident that each particular grade of oil will give uniform operating conditions through a long, indefinite period of storage.

Bernon Worsted Philadelphia Sales Agent

G. P. C. Talbott has been appointed sales agent for the worsted yarns produced by the Bernon Worsted Co., Woonsocket, R. I., and Keyer (West Va.) Worsted Mills in the Philadelphia territory.

Army Wants Bids on Serge

PHILADELPHIA—Bids for 9,000 yd., olive-drab serge due March 10 have been canceled by the Depot Quartermaster, U. S. Army. In lieu thereof he will receive bids on 30,000 yd., 16 oz., 56 to 58 in. olive-drab serge to be opened March 21. Goods should conform with specifications 8-4A.

Johnson & Johnson Gets Big Navy Contract

The U. S. Navy Department has just awarded to Johnson & Johnson, surgical dressing manufacturers, New Brunswick, N. J., a contract to supply nearly 3,500,000 yd. of gauze to the Navy. About 3,000,000 yd. of this will be in 25-yard rolls and 100-yard bolts, and the balance will be in the form of bandages. The contract specifies that all must be supplied within ten weeks.

J. H. Slutzkin Representing Warner J. Steel and Lion Yarn Co.

J. H. Slutzkin & Co., New York, are now representing Warner J. Steel, Bristol, Pa., Bradford system worsted weaving and knitting yarns, in the New York territory, as reported in these columns last week. This representation is in addition to that of the Lion Yarn Co. of Philadephia, which J. H. Slutzkin & Co. have represented for the last 10 years.

Neild and Bristol Open Direct Sales Office in N. Y.

The Neild Mfg. Co. and the Bristol Mfg. Co. have opened joint selling offices in New York, located at 66 Leonard St., the office being listed as Frank I. Neild Co., Inc.

Mr. Neild is president of the new selling agency, and Frank S. Wilcox the treasurer. Mr. Neild is general manager of the Bristol mill and president of the Neild mill. Mr. Wilcox is president of the Bristol mill and a director of the Neild mill. The New York office was established to increase the efficiency of merchandising.

Cotton Products Sales Force Changes

Cotton Products Co., Philadelphia, has announced the following changes in their sales department: James Witherspoon has been appointed representative covering the trade in Greensboro, N. C., market, and N. P. Murphy, formerly acting as their representative in that section, has been appointed member of their sales force at main offices, Philadelphia, and will sell their silk yarns in that market.

Dull Burlap Trading on Declining Market

The burlap exchange closed quiet but steady at mid-week, notwithstanding slightly easier cables from Calcutta. Reports of inactivity on the outside market caused hesitancy among traders.

The 8 oz. 40s for spot, two weeks arrival, and March shipments were 5.30c. The 10½ oz. goods for the same deliveries were 6.60c.

Cheney's Show Paris Models With Matching Fabrics

An exhibition of original models from the summer collections of Paris designers was held in the New York showrooms of Cheney Bros., beginning Tuesday and continuing until Thursday. The showing included sport and daytime, afternoon and evening dresses by the leading French couturiers. In each instance Cheney Bros. displayed a fabric from their own line, matching the fabric used by the French designer. Particular interest centered on an evening dress made of shantung.

Full-Fashioned in One Operation?

(Continued from page 36)

first importance to any manufacturer but especially so to one in large cities where space represents more of an item in overhead.

Claim was made that this new machine eliminates waste of thread which under present methods is thrown away when a portion of the instep of the leg is raveled out in transferring the leg from the legger to the topper. It would also prevent imperfect matching between the leg and the foot. At the same time it was stated that the time required for the entire operation was no longer than consumed in the legging operation under present methods.

Such reports as these have been issued from time to time during the last twenty years, but to date nothing has been done with machines of this character in the way of commercial production. Many are of the opinion that as soon as such a full-fashioned machine is placed upon the market it will not be long before a majority of builders of full-fashioned machines will also offer their customers this type of machine if so desired, a representative of a German full-fashioned machine

sold in the United States stating that if there would be a demand for such a machine his concern would undoubtedly be in a position to furnish them with the latest improvements to American buyers.

Although not fully discounting the claims made for the new machine, a handler of textile machinery stated that he felt all was not as reported for the machine. He asserted that claim was made that it produced stockings with a regular square heel. If this is a fact, he stated, then it would be necessary to shut down the machine for several minutes to place the heel tabs back on the needles to continue the footing operation without transferring the instep. He asserted it is impossible that the time consumed in knitting the entire stocking is not longer than that hitherto needed for knitting the leg alone.

What the new-type full-fashioned machine will amount to and what it will mean to the industry are questions being asked; and, although it is probable that all benefits claimed will not be attained by it at first, opinion is general that it means an important step in the history of the knitting trade in the world and the immediate developments that are expected along these lines this year will be carefully studied by all in the business or connected with it. Such a machine has been in the theoretical stage for so many years that a large number are reluctant to believe it is practical. Yet there are certain indications that such is not the case, and in the near future it is probable that far-reaching announcements may be made by responsible concerns along these lines.

Boston Wool Receipts

Receipts of domestic and foreign wools at Boston, also imports at Philadelphia and New York for the week ended March 1, based upon data compiled by the Market News Service of Bureau of Agricultural Economics, Department of Agriculture, are as follows:

	Week Ended March 1	—Totals to Date— 1929	1928
Domestic	741,000	12,556,000	10,600,000
Foreign	2,518,000	15,597,000	32,927,000
Total	3,259,000	28,153,000	43,527,000
IMPORTS AT PRINCIPAL PORTS			
Boston	2,518,000	15,597,000	32,927,000
Philadelphia	1,272,000	15,707,000	17,391,000
New York	2,800,000	11,789,000	17,847,000
Total	6,590,000	43,093,000	68,165,000

New Strike Called at Bemberg-Glanzstoff Plants

ELIZABETHTON, TENN. — Charging that the American Bemberg Corp. and the American Glanzstoff Corp., failed to live up to an agreement reached following the strike last year, J. C. Donnelly, president of Elizabethton local 1630, United Textile Workers, called a new strike at these plants on Monday. Officials of the Bemberg-Glanzstoff organization stated that the plants were operating as usual, and that all regularly employed workers had ignored the union declaration.

Berkshire and Apex Cut Hosiery Prices

Reductions of from 25c. to 50c. in full-fashioned silk hosiery prices were announced by Berkshire Knitting Mills, Reading, Pa., and Apex Hosiery Co., Philadelphia, effective last Monday. The Berkshire cut is retroactive to Feb. 17. The reductions come at a time of pronounced weakness in women's full-fashioned silk hosiery prices, and hope was expressed that they would help to stabilize the market at this end.

Immediately after the cut was announced, Julius Kayser & Co., were reported to have stated that that firm will make no further price revisions on full-fashioned. Kayser cut prices on these lines on Aug. 10, last year, and this cut represents the minimum figure at which the company will sell, it was asserted. Several other large mills also indicated that they would hold to current prices.

New Berkshire List

562	7-thread, 42-gauge, cotton welt and foot	$8.50
737	7-thread, 42-gauge, all silk	10.50
750	5-thread, 42-gauge, all silk, plain	9.00
767	7-thread, 42-gauge, silk welt, cotton foot	9.50
736	4-thread, 45-gauge, all silk, picot top	11.00
774	4-thread, 42-gauge, all silk, picot top	10.00
769	3-thread, 48-gauge, all silk, picot top, all silk foot	12.50
764	5-thread, 42-gauge, all silk, black heel	10.75
573	10-thread, 42-gauge, cotton welt and foot	10.75
770	Bemberg to top	7.50

New Apex List

476	4-thread all silk picot, curved narrow heel	$10.00
2,416	4-thread all silk, black, curved narrow heel	10.75
336	10-thread all silk to welt lisle foot, curved narrow heel	10.75
256	7-thread all silk to welt lisle foot, curved narrow heel	8.50
2,066	7-thread all silk, lisle foot, curved narrow heel	9.50
2,726	7-thread all silk, silk foot, curved narrow heel	10.50
786	7-thread all silk, 45-gauge, picot edge, curved narrow heel	11.75
859	7-thread silk to welt, lisle foot, pointed heel	9.00
424	10-thread silk to welt, lisle foot, pointed heel	11.25
1,407	4-thread all silk, black double, pointed heel	12.00

Terms net/10 f.o.b. mill.

Chemists and Colorists Discuss Wool Dyeing and New Solvents

"The Dyeing of Vat Colors on Wool" and "The Relation of New Solvents to the Textile Industry" were discussed at the meeting of the New York section of the American Association of Textile Chemists and Colorists, held in the club room of the Building Trades Employers' Association, New York City, on Friday evening, Feb. 28.

Following the informal dinner, P. F. Kingsbury, chairman of the section, introduced Dr. H. Meyer, of the technical staff of the General Dyestuff Corp. Dr. Meyer, after outlining the progress made in the application of vat dyes to wool, described the present practice in dyeing raw stock and slubbing with the Helindone colors. These dyestuffs, which are specially selected vat colors for wool, are available in a wide range of producing fast shades. The speaker showed sample of wool dyed in various shades, explaining the methods and apparatus needed for the processes. According to the speaker, the advantages of the Helindones which compensate for their higher cost over the acid and chrome colors, are the ease of application, superior fastness of shades, and better condition of the wool.

N. D. Harvey, Jr., of the Carbide & Carbon Chemicals Corp., outlined the uses and properties of a series of new solvents recently introduced to the textile industry. Among the products discussed were Celosolve, a dispersing agent for acid, basic and vat dyes; methylene glycol, used as a lubricant for wool fibers; and triethanolamine, which forms neutral soaps with fatty acids. Other compounds described by Mr. Harvey were Carbitol, for use in dyeing; butyl Cellosolve, a spotting agent, with naptha for cellulose acetate; and dichlor ethyl ether, a chlorinated solvent also of value as a spotting agent.

Decorative Arts Show Highlights Rayon Fabrics

The prominent place that rayon has in the modern home was again emphasized at the Decorative Arts Exhibition held by members of the Art Alliance of America at the Art Center, New York City. Rayon was employed in all the interiors from the bath room to the living room and porch sets.

Of special interest was the young girl's bedroom in rose and blue designed by Kachinsky. The furniture of white cherry was modern in design and so was the round rug in tones of silver and blue. The walls were papered in a deep rose with a conventionalized floral motif in blue and rose. The window repeated the same coloring. Glass curtains of printed rose ninon designed by Donald Deskey had over drapes of rayon duplex satin in three graduating tones of blue stripes accented by bands of rose. The bed spread was of the same fabric—a product of the Hadley Silk Mills. Another interesting fabric, this time of rayon combined with linen and also designed by Deskey, and a blue rayon moire were used for the coverings for stool and chair. Both were developed by the Du Pont Rayon Co. in co-operation with F. Schumacher & Co.

Paul Miller introduced an occasional chair in the modern manner covered with rayon and jute damask in green and silver and there was a dining room set by Alfred Muller with the chairs upholstered in a novelty rayon rep richly blending with the wood.

That rayon has a place in the motor car as well as the home was indicated by the automobile cushion, the design of which won a prize at the Art Alliance Show last year.

Paneling the walls of the exhibition were interesting wall papers designed by Alice Donaldson and Richard Marvede and hung with gaily printed panels. Dubassoff designed rayon voile panels called "Svelda" for Galey & Lord. Teresa Kilham did a rayon voile design for Amory, Brown & Co.

Useful Catalogs

Welded Piping. The Linde Air Products Co., New York. Booklet. Fabrication of welded piping designs for use of architects, designers, engineers, and draftsmen.

Bent Tube Boilers. Combustion Engineering Corp., New York. Bulletin BVMI. Describing V M Type boilers designed for limited-space conditions.

Roller Chains. Diamond Chain & Manufacturing Co., Indianapolis, Ind. Wall Chart. Information for selection of the proper chains and sockets for various applications.

Humidifiers. American Moistening Co., Providence, R. I. Booklet by James W. Cox, Jr. Tour No. 6, describing humidifying problems in Massachusetts, Connecticut, and Louisiana.

Rayon Loom. The Stafford Co., Readville, Mass. Leaflet. Describing the Stafford automatic shuttle-changing loom for weaving rayon.

Pulverized Coal. Kennedy-Van Saun Mfg. & Eng. Corp., New York. Folder. Illustrating mills for the fine pulverization of coal.

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Textile Patents

MACHINE for raising nap on textiles and the like. 1,741,542. A. O. Schramm and J. H. Schreiber, St. Louis, Mo. Assigned to American Laundry Machine Co., Cincinnati, Ohio.

MACHINE for dyeing, scouring and washing wool and other fibrous materials. 1,742,114. J. Whitaker and R. Whitaker, Saville Town, Densbury, England.

MERCERIZING solution, Method of treating. 1,743,122. W. H. Egbert, Buffalo, N. Y. Assigned to Joremba Co., Buffalo, N. Y.

MULTIPLE tape winding machine. 1,743,298. P. Wieghardt. Magdeburg, Germany. Assigned to Firm Fried. Krupp Grusonwerk Aktiengesellschaft, Magdeburg, Ruckau, Germany.

NARROW-WARE loom. 1,741,641. T. Maihn, Paterson, N. J.

NEEDLING machine. 1,742,133. C. H. Chase, Stoneham, Mass. Assigned to Caro Cloth Corp., Carolina, R. I.

STRETCHING AND DYEING frame. 1,741,541. A. O. Schramm, St. Louis, Mo. Assigned to American Laundry Machine Co., Cincinnati, Ohio.

SLUGS in thread, Adjustable means for catching. 1,743,650. H. C. Bacon, Willimantic, Conn. Assigned to Harry C. Smith Co., Willimantic, Conn.

SPINDLE clutch. 1,741,197. G. H. McGrath, Whitinsville, Mass.

SPINNING machine. 1,743,601. W. Gross. Roll-Weil-on-the-Neckar, Germany.

TEXTILE fabrics, Method and means for treating. 1,741,338. W. S. Rowley and H. W. Butterworth, Jr., Philadelphia, Pa. Assigned to H. W. Butterworth & Sons Co., Philadelphia, Pa.

TEXTILE materials, Imparting bacteria-resistant properties to. 1,745,134. C. B. White, Montclair, N. J., and E. Schæfer, Englewood, N. J. Asigned to Arvatex Processes, Inc., Lodi, N. J.

WEB cleaning mechanism. 1,744,151. H. V. Ball, Concord, Mass. Assigned to R. Hoe & Co., Inc., N. Y. C.

Georgia Manufacturers to Meet April 3 and 4

One of the features of the program now being arranged for the annual meeting of the Cotton Manufacturers' Association of Georgia, which will be held in Atlanta, April 3-4, according to T. M. Forbes, secretary of that organization, will be an address by Judge Price Gilbert, an associate justice of the Supreme Court of Georgia. As previously announced, the meeting will be held at the Atlanta Biltmore Hotel and the customary social features, including the annual banquet, will be omitted this year.

Duty-Free Entry into Canada of Unused Fabric Waste

A Canadian customs memorandum of Feb. 25, 1930, quotes an order-in-council passed Feb. 17, designating a new tariff item (No. 794) for waste portions of unused fabrics, according to a cablegram from American Commercial Attache Lynn W. Meekins, received in the Department of Commerce. The new item reads as follows: "Waste portions of unused fabrics, not to include remnants or mill ends, imported to be sorted and disintegrated or manufactured into wiping rags"—free under all tariffs.

American Business Supports Leipzig Fair

This year more American business firms are sending merchandise and machinery buyers to the Spring Sample Fair at Leipzig, Germany, than were sent in any previous year in the history of this 700-year-old institution, according to Herbert A. Johnson, American representative of the fair.

Rayon Imports for January

The Department of Commerce, Bureau of Foreign and Domestic Commerce, Washington, has announced imports of rayon yarns, waste, staple fiber and yarns made from waste into the United States during the month of January, 1930, as follows:

	Pounds	Dollars
Yarns, Threads and Filaments		
Austria	16,368	9,282
Belgium	23,810	15,746
France	295,720	201,273
Germany	136,587	136,581
Italy	420,691	295,256
Netherlands	246,400	165,020
Switzerland	14,125	11,129
United Kingdom	5,248	9,197
Brazil	220	70
	1,159,169	843,554
Waste		
Belgium	126	28
Germany	32,172	8,523
Italy	32,921	9,324
Switzerland	36,532	10,164
United Kingdom	36,950	1,641
Canada	42,702	3,117
Brazil	13,104	1,537
British India	6,160	211
Japan	12,000	2,469
	212,667	37,014
Staple Fiber		
Germany	8,342	3,331
Italy	5,009	1,673
	13,351	5,004
Yarns Made from Waste		
Germany	41	38
Switzerland	3,033	2,110
	3,074	2,148

Business News

Combustion Engineering Corp. Hazelton, Pa., Representative Offices

Combustion Engineering Corp., New York, announces the removal of their Hazleton, Pa., representative, the Coxe Stoker Engineering Co., to new quarters, Room 1109 to 1114, Markle Bank Building.

King & Shepherd to Represent Mason Regulator Co.

The Mason Regulator Co., Boston, Mass., has announced the appointment of King & Shepherd, New York City, as sales representatives for the New York territory effective March 1. An advisory engineering service as well as a local stock will be offered to clients.

Alsop Engineering Co. Enters New Quarters

The Alsop Engineering Co., Hy-Speed machines, announce that they will occupy their new quarters at 39 West 60th St., just west of Broadway, New York, on April 1, 1930. The new building offers better facilities for the transaction of the company's business.

M. C. Steffen now Cincinnati Manager for Cutler-Hammer

Effective Feb. 1, H. C. Steffen becomes manager of the Cincinnati office of Cutler-Hammer, Inc., manufacturers of electric control apparatus, with headquarters at Milwaukee, Wis. Mr. Steffen takes the place of R. I. Maujer, who has resigned. Mr. Steffen comes to Cincinnati from the St. Louis office of the company, where he has been stationed during the last five years.

F. E. Harrell Advanced by Reliance Electric

F. E. Harrell has been appointed engineer in charge of drafting and experimental departments of the Reliance Electric & Engineering Co., Cleveland, Ohio, manufacturers of alternating-current and direct-current motors.

Mr. Harrell started with the Reliance organization in 1924 after graduation from Purdue University in electrical engineering.

Bristol Co. Establishes California Office

The Bristol Co., Waterbury, Conn., recording instruments, has recently opened a new sales and service office in Los Angeles, Calif. S. W. Case has been appointed district manager, and W. H. Rogers, sales and service engineer. Both these men have a background of several years experience in the use of recording, indicating and control instruments, particularly as applied to industrial applications.

To Establish Concern Like Business Training Corp. in London

Harold Whitehead, who has been one of the executives of the Business Training Corp., New York, is sailing next month for London to establish a similar business service of his own. By means of a reciprocal arrangement with his former firm, both concerns will be able to render sales and merchandising service to firms in the export and import field.

Some of the types of work which he

and his organization will be prepared to undertake are: the preparation and conduct of sales training programs; commercial research in England and Continental Europe; securing agencies for American products; consultation with American manufacturers and British representatives on merchandising policies and methods; and conducting confidential negotiations and arbitrations between American and British firms.

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Committee D-13 Next Week

Plans are complete for the spring meeting of Committee D-13 of the American Society for Testing Materials to be held Thursday and Friday of next week, March 13 and 14, at the Hotel Charlotte, Charlotte, N. C. Subcommittee and section meetings will take place on Thursday, and general meeting on Friday.

During the meeting of sub-committee of B-1, Thursday at 3 p.m., a symposium on abrasion will be conducted.

Papers to be presented at the general meeting include: "The Testing Laboratory and Its Relation to Textile Mill Work," by R. H. Adams, of Callaway Mills; "Variations in Length of Cotton Fibers," by H. W. Barre, of South Carolina Agricultural Experimental Station; "Progress in Cotton Fiber Studies," by R. W. Webb, of U. S. Department of Agriculture; "Humidity Control," by E. C. Gwaltney, of the Morgan Mills. Professor George B. Haven, of Massachusetts Institute of Technology, will present a paper with reference to Mr. Gwaltney's regain measuring apparatus. Mr. Appel, of the U. S. Bureau of Standards, will demonstrate a "Flexometer" which was developed for measuring the stiffness and resiliency of fabrics, and thereby the draping quality.

Stehli to Have Office in Garment Center

The StehliSilks Corp., 200 Madison Ave., New York, has leased a corner store at 530 Seventh Ave., according to announcement by Paul Hyde Bonner, vice-president of StehliSilks Corp.

It was selected by the StehliSilks Corp. because of the fact that it was situated almost in the center of the wholesale dress industry.

Lancaster Mills to Liquidate

At the annual meeting of the stockholders of Lancaster Mills, Clinton, Mass., on March 5, it was voted to liquidate the business and dispose of all machinery, inventory and other assets of the company. The meeting was adjourned to April 2. At present the shares represent 13,197 preferred and 17,943 common. The Lancaster Mills were incorporated in 1844 for manufacturing ginghams, with an authorized capital of $500,000, and until recently employed 2,000 operatives. Before selling some of the machinery about a year ago the equipment consisted of 105,000 spindles and 4,470 looms.

Meldrum Held on Check Passing Charge

Archibald T. S. Meldrum, who claims to have organized a company to be known as The Strathcona Rayon Corp., which would purchase buildings of a cotton mill at Calhoun, Ga., and adapt them for rayon manufacture, was arrested in Philadelphia Monday of this week, given a hearing before Magistrate Roberts on Tuesday and held in $2,500 bail for a further hearing on March 14, on a charge of obtaining money under false pretences.

This action was taken as the result of alleged calls by Mr. Meldrum on textile machinery firms and others, at the conclusion of which, it was claimed, he asked for small personal loans. Detectives handing the case stated that they had received telegraphic information from the Chief of Police of Calhoun, Ga., to the effect that the sheriff in Atlanta was seeking Mr. Meldrum. They also claimed that he admitted during questioning that he had given three checks in New York City without sufficient funds to cover them and that he also admitted making several loans of money on concerns in Philadelphia. They stated, however, that he claimed that his alleged negotiations are of a bona fide character and that he actually has $1.97 in the banking institution on which he drew several checks for larger amounts, and that he expected to have sufficient funds to cover the checks before they were put through.

Chatillon Stockholders Approve Tubize Merger

The proposed merger of Tubize Artificial Silk Co., and American Chatillon Corp. was placed before the stockholders of the Chatillon company for action at a meeting held in New York Thursday afternoon. The stockholders voted in favor of the consolidated plan, the terms of which were presented in TEXTILE WORLD on Feb. 1.

A special meeting of the stockholders of Tubize company, called to consider the merger project, was held Wednesday in New York. Roland L. Taylor, chairman of the Tubize board and a director of American Chatillon presided. The plans and terms of the consolidation were harmoniously discussed, it was stated, but it was decided to defer voting on the merger until March 12, pending the receipt from Europe of certain signed documents, now on the way.

Crown Worsted Appoints New Philadelphia Sales Agent

James P. Elder, 308 Chestnut St., Philadelphia, has been appointed sales representative in the Philadelphia market for the sale of worsted yarns produced by the Crown Worsted Mills, Providence, R. I. Mr. Elder was formerly selling agent in that vicinity for the Bernon Worsted Mills and the Queensbury Mills.

Obituary

Bradley M. Rockwood

Bradley M. Rockwood, for 32 years treasurer of the Norfolk Woolen Co., Franklin, Mass., died on Feb. 27. He was a leader in the reworked wool industry. Born in Franklin, Mass., in 1863 and graduated from the Franklin High School in 1881, he was for a short time associated with the late Francis B. Ray in the woolen business in Franklin, but in 1882 became part of the organization of the Norfolk Woolen Co., which was founded by the late W. F. Ray of Franklin. Mr. Rockwood's entire business life since then for almost 50 years has been with the Norfolk Woolen Co. Upon the death of Mr. Ray in 1898, Mr. Rockwood became treasurer and general manager of the business. He continued as general manager for 25 years, and as treasurer of the company up to his death. He served for two years as a member of the Massachusetts State Senate and for two years in the Massachusetts House of Representatives. For many years he served as a director and vice-president of the Franklin National Bank and trustee of the Benjamin Franklin Savings Bank, both of Franklin. He was a member of the First Congregational Church of Franklin since 1884 and for 25 years served as its treasurer. He was a director of the Franklin Y.M.C.A. and a member of the Board of Governors of the Franklin Country Club. He was president of the National Association of Wool Fiber Manufacturers since its organization. He was a member of several Masonic organizations. Funeral services were held March 2.

John R. Montgomery

John R. Montgomery, founder of J. R. Montgomery Co., Windsor Locks, Conn., died recently at his home in Windsor, Conn., at the age of 85. Born in Great Barrington, Mass., his first textile experience was obtained at Housatonic, Mass. The Montgomery company was established as warp manufacturers at Windsor in 1871, and being later sold, became associated with Brothers Novelty Yarn Manufacturing Co. This firm introduced mercerized cotton yarn from which grew the company's business. Mr. Montgomery retired two years ago. He is survived by one brother.

John H. Hughes

John H. Hughes, president, John H. Hughes & Co., Philadelphia, was found dead in the offices of his firm, March 4, and is believed to have suffered an attack of acute indigestion, causing him to fall, striking a gas fixture and turning on the gas. His body was discovered by Harry Freeman, secretary and treasurer of the company, which was founded by Mr. Hughes more than 25 years ago.

Paul B. Belin

Paul B. Belin, president of Scranton Lace Company, died Feb. 28 at the Hahnemann Hospital, Scranton, Pa., following a major operation. Mr. Belin, who was a son of the late Henry Belin, Jr., was born in Scranton, July 26, 1875. In 1895 he was graduated from Yale, and in 1898 became treasurer and general manager of the Scranton Lace Curtain Company, which is now known as the Scranton Lace Company. In 1918 he became president of the company.